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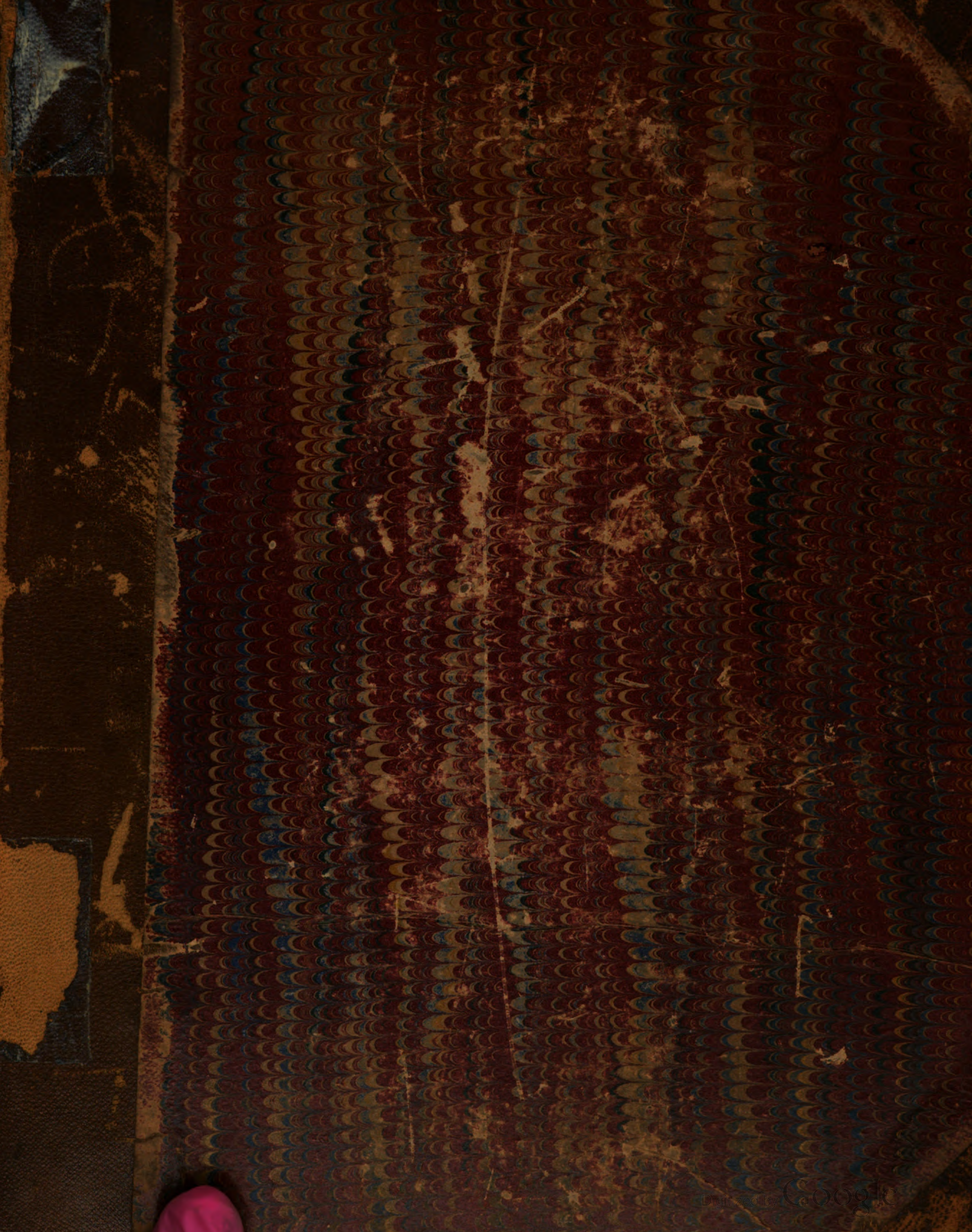
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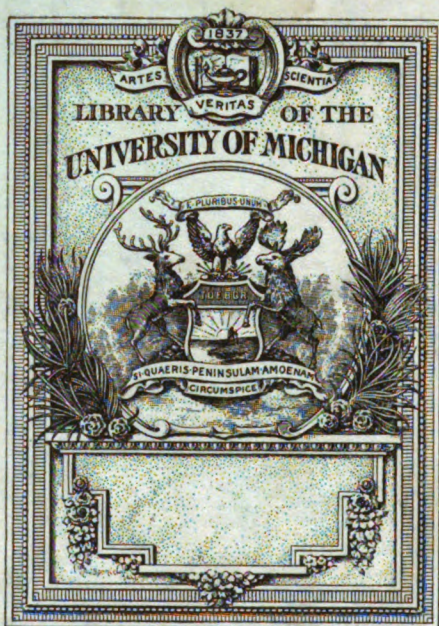
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THE
METAPHYSICS OF ARISTOTLE,

TRANSLATED FROM THE GREEK ;

WITH
COPIOUS NOTES,

IN WHICH
THE PYTHAGORIC AND PLATONIC DOGMAS RESPECTING NUMBERS AND
IDEAS ARE UNFOLDED FROM ANTIENT SOURCES.

TO WHICH IS ADDED,
A DISSERTATION
ON
NULLITIES AND DIVERGING SERIES;

IN WHICH
THE CONCLUSIONS OF THE GREATEST MODERN MATHEMATICIANS ON THIS SUBJECT ARE
SHOWN TO BE ERRONEOUS, THE NATURE OF INFINITELY SMALL QUANTITIES IS
EXPLAINED, AND THE TO 'EN, OR THE ONE OF THE PYTHAGORÆANS
AND PLATONISTS, SO OFTEN ALLUDED TO BY ARISTOTLE
IN THIS WORK, IS ELUCIDATED.

BY THOMAS TAYLOR.

Ὡς περ τινα ἀθανάτων καὶ πατρῶν κληρὸν διαγωνίζω τοῖς
μεταγενεστέροις διαφυλάξαι τὰ στοιχεῖα τῶν ἀρετῶν καὶ ἀληθείας τοὺς κανόνας, ταῦτα
εἰς κοινὸν ὄφελος ἐν γραμμασί καταθεμένος.

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1801.

But, among these, to know all things necessarily belongs to him who in the most eminent degree possesses universal science *. For such a one in a certain respect knows all subjects. But things most eminently universal are nearly most difficult too for man to know. For they are most remote from the senses. But the most accurate of the sciences are those which especially relate to things first. For those sciences which consist from fewer things, are more accurate than those which are denominated from addition; as arithmetic than geometry. But indeed that science is more doctrinal which speculates the causes of things. For those teach others, who about every thing relate the causes. But to know, and to know scientifically for the sake of such knowledge, especially belongs to the science of that which is most eminently the object of scientific knowledge. For he who chooses to know scientifically for the sake of such knowledge, especially chooses that which is most eminently science. But such is the science of that which is most eminently the object of scientific knowledge. And objects of this kind are things first and causes. For, through and from these, other things are known, but these are not known through things in subjection to them. But the most principal of sciences, and which is more a principle than the science which is in subjection, is that which knows on what account every thing is to be done. But this is the good of every thing; and universally that which is best in every nature. From all therefore that has been said, that name which is the object of our investigation falls into the same science. For it is necessary that this should be speculative of first principles and causes. For the good also, and that for the sake of which a thing subsists, is one among the number of causes.

But that this science is not employed in making, is evident from those who first philosophised. For, both now and at first, men began to philosophise through wonder †: at first indeed admiring such dubious particulars, as were of a more easy solution; but afterwards proceeding in this manner gradually, they began to doubt about things of greater importance, such as concerning

* The science of beings, so far as they are beings, is the most universal science; and he who possesses this science, in a certain respect knows all things: for he sees particulars comprehended in universals, and effects in their causes.

† As the design therefore of modern philosophy, *i. e.* the pursuit of matter through her dark and infinite labyrinths; seems rather calculated to excite than to remove wonder, it may be truly said, that philosophy now ends where it formerly began.

the

the properties participated by the moon, the sun, and the stars, and the generation of the universe. But he who doubts and wonders, is of opinion that he is ignorant; and, on this account, a philosopher in a certain respect is a lover of fables*. For a fable is composed from things wonderful. So that if now and at first men philosophised, in order to fly from ignorance, it is evident that they pursued scientific knowledge for the sake of knowing, and not for the sake of any use. But the truth of this is also testified by that which has happened. For nearly all such things as are necessary being present, and which contribute both to ease and the conduct of life, prudence of this kind began to be investigated. It is evident therefore, that we seek after scientific knowledge for the sake of no other utility than that which arises from itself; and that as we call him a free man who exists for his own sake, and not for the sake of another, so this alone among the sciences is liberal: for this alone subsists for its own sake. On this account, too, the possession of it may justly be considered as not human. For in many respects human nature is servile; so that, according to Simonides, divinity alone possesses this honor; but it is unbecoming that man should only investigate the science which pertains to himself†. But, if the poets say any thing to the purpose, and a divine nature is naturally envious, it is likely that it would especially happen in this particular, and that all those would be unhappy who surpass the rest of mankind. But neither does a divine nature admit of envy; and poets (according to the proverb) speak falsely in many things.

Nor is it proper to think that any other science is more honorable than a science of this kind: For that which is divine is also most honorable. But a thing of this kind will alone subsist twofold. For the science which divinity possesses is especially divine; and this will likewise be the case with the science of things divine‡, if there be such a science. But the science of

* A philosopher may be said to be a lover of fables, because he studies to learn things which, from being unknown, are admirable; for fables are composed from things admirable and incredible.

† The word *μονον* is evidently wanting in the original in this place. Instead, therefore, of *ανδρα δ' ουκ αξιον μη ζητειν την καθ' αυτον επιστημην*, we should read *ανδρα δ' ουκ αξιον μη μονον*, &c.

‡ Aristotle has already informed us that the science which is the subject of this work, speculates first principles and causes, and he now further intimates that it is the science of things *divine*. There are therefore, according to Aristotle, *divine principles and causes*; and these are the intelligibles which in the twelfth book he places over the starry spheres, and which in reality are no other than those incorporeal causes denominated by Plato *ideas*.

which

which we are speaking alone possesses both these prerogatives. For divinity appears to be a cause and a certain principle to all things; and either alone, or in the most eminent degree, divinity possesses such a science as this. All other sciences therefore are more necessary, but no one is better than this. But it is requisite in a certain respect to establish this science in an order contrary to that of the inquiries which men made from the beginning. For all men, as we have said, begin from wonder to investigate the manner in which a thing subsists; just as it happens to those, who have not yet contemplated the cause of those wonderful figures that move spontaneously, or the cause of the revolutions of the sun, or the reason of the incommensurability of the diameter of a square to the side. For it seems admirable to all men, that a thing which is not the least of things, should not be measured. But it is requisite they should end in the contrary, and in that which is better, according to the proverb, as is the case in these things when they learn them. For there is not any thing which would appear more wonderful to a geometrician, than if the diameter should become commensurable to the side. And thus we have declared what the nature is of that science which is the object of our investigation, and what the mark to which the inquiry and the whole method ought to be directed.

C H A P. III.

BUT, since it is evident that it is requisite to consider the science of causes from its principle (for we then say that each particular is known when we know the first cause of it), and causes are said to subsist in a fourfold respect, one of which we assert to be *essence* *, and the subsisting as a certain particular thing (for the inquiry, On what account a thing exists, is referred to the last reason †) and cause and principle form the first *why*: but a second cause is *matter*; and that which subsists as a subject: a third is that *whence the beginning of motion is derived*: but the fourth is the cause opposite to this, *that for the sake of which a thing subsists, and the good* (for this is the end of all generation). This being the case, though we have speculated

* By *essence* here Aristotle means *form*; for every thing is that which it is through form. Hence things defined are defined through this.

† That is, to definition; but this is the formal cause.

sufficiently

sufficiently concerning these causes in our Physics, yet, at the same time, we shall take along with us in our inquiry those who prior to us have engaged in the speculation of beings, and have philosophised about truth. For it is evident that they also assert that there are certain principles and causes. A repetition, therefore, of what they have said will be of advantage to the present discussion. For, either we shall find another genus of cause, or we shall more firmly believe those we have just now enumerated.

The greater part then of those that first philosophised were of opinion that the principles of all things alone subsisted in the species of matter. For that from which all things subsist, from which they are first generated, and into which they are finally corrupted, the essence indeed remaining but becoming changed by participations, this, say they, is the element, and this is the principle, of things. Hence they were of opinion that neither is any thing generated nor corrupted, because this nature is always preserved. Just as we say that Socrates is neither simply generated, when he becomes beautiful, or a musician, nor is corrupted when he loses these habits, because the subject, Socrates himself, remains; in like manner, neither is any one of other things, either generated, or corrupted. For it is requisite there should be a certain nature, either one, or more than one, from which other things are generated while it is itself preserved.

But with respect to the multitude and form of this principle, all philosophers do not assert the same. For Thales indeed, who was the leader of this philosophy, said that this principle is water. On this account he asserted that the earth is placed upon water, entertaining perhaps this opinion from seeing that the nutriment of all things was moist, that the hot itself was generated from this, and that from this animals lived. But that from which any thing is generated is the principle of that thing. On this account, therefore, he formed this opinion, and because the seeds of all things have a moist nature. But water is the principle of nature to things moist. But there are some who think that men of the greatest antiquity, who flourished long before the present generation, and who first theologized*, entertained the very same opinion respecting nature. For they made Ocean† and Tethys the parents of generation, and the solemn oath of the gods water, which is called

* Aristotle here doubtless means Orpheus, Homer, and Hesiod.

† By *Ocean* the ancient theologists signified the divine cause of all motion, and by *Tethys* the cause which separates all the different kinds of motion from each other.

Styx* by the poets. For that which is the most antient is the most honorable: but a solemn oath is the most honorable. That this opinion, therefore, respecting nature is very antient, is perhaps not immanifest. Thales indeed is said to have discoursed in this manner respecting the first cause. For no one will think that Hippo deserves to be ranked with these, on account of the meanness of his cogitative part †. Anaximenes and Diogenes placed air prior to water, and considered it as in the most eminent degree the principle of simple bodies. Hippasus the Metapontine, and Heraclitus the Ephesian, considered fire as the principle of all things. But Empedocles, who introduced four principles, besides those already mentioned added earth for the fourth. For according to him these always remain, and are not generated, but are mingled and separated in multitude and paucity, into one, and from one. But Anaxagoras the Clazomenian, who was prior in age to Empedocles, but posterior in his works, asserts that there are infinite principles. For he says, that nearly all things which consist of similar parts, such as water or fire, are thus generated and corrupted by concretion and separation alone; but that otherwise they are neither generated nor corrupted, but remain as things eternal. From these men, therefore, any one might be led to think that cause alone belongs to that which is called the species of matter. But in consequence of their proceeding in this manner, the thing itself afforded them a passage, and compelled them to investigate. For though every corruption and generation is in the most eminent degree, from something, as subsisting from one, or from many things; yet, why does this happen, and what is the cause of it? for the subject itself does not make itself change. I say, for instance, that neither wood nor brass is the cause that either of these is changed. Nor does wood make the bed, nor brass the statue, but something else, which is the cause of mutation. But to investigate this is to investigate another principle, which we should call that from whence motion derives its beginning. Those, therefore, who have entirely touched upon this method from the beginning, and who assert that the subject is one, have not rendered any thing in this inquiry difficult to themselves; but some of those who assert that all things are one, as if vanquished by this inquiry, assert that the one is immoveable, and likewise the whole of nature, not according to gene-

* *Styx* may be considered as the cause by which divine natures retain an immutable sameness of essence.

† Aristotle doubtless says this of Hippo because he was an atheist.

ration and corruption (for this is an antient opinion, and acknowledged by all men), but also according to every other mutation. And this is the peculiarity of their doctrine.

Of those, therefore, who assert that the universe is alone one, it has so happened that no one has perceived a cause of this kind, except Parmenides*; and this has happened to him so far as he admits that there is not only one, but, in a certain respect, two causes. But to those who admit that there are more than two causes, it belongs in a still greater degree to assert a cause of this kind; such as those who consider as causes the hot and the cold, or fire and earth. For they use fire as possessing a motive nature; but water and earth, and things of this kind, as endued with a nature contrary to the motive. But after these and such like principles, as not being sufficient to generate the nature of things, again, being compelled, as we have said, by truth, they investigated that principle which is consequent to this. For perhaps neither earth, nor any other similar nature, is the cause that some things subsist, and that others are generated in a good and beautiful manner, nor is it probable that they entertained such an opinion. Nor, again, is it proper to ascribe a thing of such great importance to chance and fortune. He † therefore who asserted

* It must be observed of Parmenides, that he wrote some things according to *truth*, and others according to *opinion*. Plato admires the profundity of his conceptions. See my Introduction to, and Translation of, Plato's Parmenides. See also that treasury of antient erudition, the Commentaries of Simplicius on the Physics of Aristotle.

† The following remarkable extract from the lost works of Anaxagoras, of whom Aristotle is now speaking, will doubtless be acceptable to the philosophic reader, as I believe he will not find the whole of it in English, in any other place. The passage is preserved by Simplicius in Arist. Phys. p. 7.

Νους δε εστιν απειρον, και αυτοκρατες, και μιμικται ουδενι χρηματι· αλλα μονος αυτος αφ' εαυτου εστιν. Ει μη γαρ αφ' εαυτου ην, αλλα τεω εμεμικτο αλλω, μετειχεν αν απαντων χρηματων, ει εμεμικτο τεω· εν παντι γαρ παντος μοιρα ενεστιν, ωσπερ εν τοις προσθεν εμοι λελενται· και ανακωλυεν αυτον τα συμμεμιγμενα, ως ε μηδενος χρηματος κρατειν ομοιως, ως και μονον εοντα αφ' εαυτου. Εστι γαρ λεπτοτατοντε παντων χρηματων, και καθαρωτατον. Και γνημην γε περι παντος πασαν ισχει, και ισχυει μεγαλιν. Όσαγε ψυχην εχει, και μειζω και ελαττω, παντων νους κρατει. Και της περιχωρησιος της συμπασης νους ενερατησεν· ως περιχωρησαι την αρχην. Και πρωτον απο του σμικρου ηρξατο περιχωρησαι· επειδε πλειον περιχωρει, και περιχωρησει επι πλειον. Και τα συμμεμιγμενα τε και αποκρινόμενα, και διακρινόμενα, παντα εγινωσεν νους, και όποια εμελλε εσεσθε, και όποια ην, και όσα νυν εστιν, και όποια εσται. Παντα διεκοσμησεν νους· και την περιχωρησιν ταυτην, ην νυν περιχωρει, τατε αστρα, και ο ήλιος, και η σεληνη, και ο αηρ, και ο αιθηρ, οι αποκρινόμενοι. Η δε περιχωρησις αυτη επαιησει αποκρινεσθαι· και αποκρινεται απο τε αραιου το πυκνον, και απο του ψυχρου το θερμον, και απο του ζοφρου το λαμπρον, και απο του διερου το ξηρον. Μοιραι δε πολλαι πολλων εισιν· παντα πασι δε ουδεν αποκρινεται

asserted that as in animals, so also in nature, there is a certain intellect, which is the cause both of the world, and of all order, will appear like one sober, when compared with those antients that spoke rashly. We evidently know, therefore, that Anaxagoras touched upon these reasons; though Hermotimus the Clazomenian is said prior to him to have mentioned a cause of this kind. Those, therefore, who entertained this opinion, together with establishing a principle of things, which is the cause of their subsisting in a beautiful manner, established also a principle which is the cause of motion to things.

CHAP. IV.

BUT some one may suspect that Hesiod first investigated a thing of this kind; and likewise that this is the case with any other who may have considered love or desire as a principle in beings, such, for instance, as Parmenides. For he also, devising the generation of the universe, says: "He produced

αποκρίνεται ἕτερον ἀπο τοῦ ἑτέρου, πλὴν νοῦ. Νοὺς δὲ πᾶς ὁμοίος ἐστὶ, καὶ ὁ μείζων καὶ ὁ ἐλασσων· ἕτερον δὲ οὐδὲν ἐστὶν ὁμοίον ἄλλῃ.

i. e. "Intellect is infinite, possesses absolute power, and is not mingled with any thing; but is alone itself by itself. For if it were not by itself, but were mingled with something else, it would participate of all things (for in every thing there is a portion of every thing, as I have before observed); and things mingled together would prevent it from having a similar dominion over things, as when alone by itself. For it is the most attenuated and the most pure of all things. It likewise possesses an universal knowledge of every thing, and is in the highest degree powerful. Whatever soul possesses, greater or lesser,—over all these intellect has dominion. Every thing too that comprehends or contains, is subject to its power; so that it even comprehends the principle itself. And first of all, indeed, it began from that which is small to exercise its comprehending power; but afterwards it comprehended more and more abundantly. Intellect also knew all that was mingled together, and separated, and divided, together with what they would in future be, what they had been, and what they now are. All these intellect adorned in an orderly manner, together with this circular enclosure which is now comprehended by the stars, the sun and the moon, the air and the æther, which are separated from each other. But this comprehending intellect made things to be separated; and separated the dense from the rare, the hot from the cold, the lucid from the dark, and the dry from the moist. There are many parts indeed of many things; but, in short, no one thing is separated from another except intellect. Every intellect too is similar, both the greater and the lesser; but no other thing is similar to another." Anaxagoras, from this passage, which Simplicius informs us is from the first book of his Physics, appears to have been well acquainted with the twofold order of things, *the intelligible* and *the sensible*, as well as the Pythagoreans and Plato.

Love the first of all the gods." But Hesiod *, "Chaos was generated the first of all things; but afterwards wide-bosomed Earth, and Love who excels among all the Immortals:" as if it were fit that there should be a certain cause in beings which moves and comprehends things, and binds them together. With respect to these, therefore, we may be permitted afterwards to judge, which of them ought to rank as the first. But since the contraries to things good appear also to be inherent in nature, and not only order and the beautiful, but disorder and the base; and, since things evil are more in number than such as are good, hence a certain other philosopher has introduced *friendship and strife*, each, according to him, being the cause of evil and good. For, if any one should follow and receive this doctrine in that part of his nature which reasons scientifically, and not according to what Empedocles † has stammeringly asserted, he will find that friendship is the cause of things good, but strife of things evil. So that, if any one should say that Empedocles in a manner asserts, and is the first who asserts, that good and evil are principles, he will perhaps speak well; since good is the cause of all things that are good, and evil of such as are evil. These, therefore, as we have said, thus far touched upon those two causes which we have defined in our Physics; I mean the material cause, and that whence motion is derived: but yet they have touched upon these causes obscurely, and in no respect clearly, but just in the same manner as those do, who are unexercised in battles. For these advancing towards their opponents often strike excellent blows; but neither do *these* strike from science, nor do *those* seem to know

* In my Introduction to the Parmenides of Plato, I have proved that *πρῶτον μὲν γενήσεται Χάος* 'γενετ' in the Theogony of Hesiod, was considered by all antiquity as signifying that Chaos *was generated* the first of all things, and not that it *was* the first of things; though Cudworth, from being ignorant of this circumstance, accuses Hesiod as leaning to the atheistical system (Vide Arist. de Cælo, lib. iii. & Sex. Empiric. adversus Math. p. 383, edit. Steph.). Simplicius, therefore, very properly observes, "that Hesiod, when he says that *Chaos was first generated*, insinuates that there was something prior to Chaos from which Chaos was produced. For it is always necessary that every thing which is generated should be generated from something. But this is also insinuated by Hesiod, that the first cause is above all knowledge and every appellation." Simplic. de Cælo, p. 147. Perhaps by Chaos Hesiod intended to signify a certain infinite and unknown origin of things; or perhaps, according to Damascius, the incomprehensible and perfectly united nature of that which is intelligible. I only add, that Chaos is the second of those principles after the first cause of all, which was called by Pythagoras the *indefinite duad*, and by Plato *the infinite*. See more on this subject in the following notes to the third book.

† Concerning this doctrine of Empedocles, see the following notes to the third book.

what

what they assert. For they do not scarcely in any respect appear to use these principles, except in a small degree. For Anaxagoras uses intellect as a machine to the fabrication of the world, [just as the gods are introduced in tragedies, when very difficult circumstances take place * ;] and, when he doubts on what account it necessarily is, he introduces it by force. But, in other things, he considers every thing else rather than intellect as the cause of generated natures †. And Empedocles indeed uses causes more than Anaxagoras ; but yet neither sufficiently, nor in these does he find that which is consensaneous. For in many places, according to him, *friendship* separates, and *strife* mingles things together. For when the universe through *strife* is separated into the elements, then fire, and each of the other elements, is mingled into one. But when all things through *friendship* accord in one, it is necessary that the parts from each should be again separated. Empedocles therefore, in this respect, differing from those who were prior to him, was the first that, by making a division, introduced this cause ; not making one principle of motion, but such principles as are different and contrary. Further still, he was the first who asserted that the elements which are considered as belonging to the species of matter, are four ; yet he does not use them as four, but as if they were alone two. For he uses fire indeed by itself, but its opposites, earth, air and water, as if they were one nature. But of this any one may be convinced, by considering his verses. He, therefore, as we have said, speaks in this manner, and asserts that there are so many principles.

But Leucippus, and his associate Democritus, assert that the elements of things are the *full* and the *void* ; affirming that the former is being, and the latter non-being. And again of these, they call the full and the solid being, but the void and the rare non-being. On this account they say that being has not any more subsistence than non-being, because neither has void less subsistence than body. But these are the causes of beings as matter. And, just as those who make the subject essence of things to be one, generate other things from

* In the original the words within the brackets are not to be found ; but it appears from the text of Alexander Aphrodisiensis, that they ought to be inserted, though this has not been noticed by any of the editors of Aristotle. Hence, therefore, we see the origin of that famous line of Horace :

Nec deus interfit, nisi dignus vindice nodus. incidit ;

† Plato says nearly the same of Anaxagoras in his *Phædo*.

Neither let a god intervene,
unless a difficulty worthy a god is
the unravelling should
happen.)

- Ars Poetica - line 191.

the participations of this subject, and establish the rare and the dense as the principles of participations; in the same manner these also assert, that diversities are the causes of other things. But they say that these are three: figure, order, and position. For they assert that being differs by *rysmos*, *diathege*, and *trope*: but of these *rysmos* is figure, *diathege* order, and *trope* position: for the letter *a* differs from the letter *n* in figure, but the syllable *an* from *na* in order, and *Z* from *N* in position. But these men, in a manner similar to others, negligently omit to consider with respect to motion, whence it is derived, and how it subsists in beings. And thus far, as we have said, those prior to us appear to have investigated the two causes of things.

C H A P. V.

BUT among these, and prior to these*, those who are called Pythagoreans, and who were the first that applied themselves to mathematics, gave the precedence to these disciplines; and, in consequence of being nourished in them, were of opinion that these are the principles of all beings. But since among these disciplines numbers are first by nature, and it appeared to them that in numbers more similitudes both to things which are, and to things in generation, are seen, than in fire, earth, and water (for *this* particular property† of numbers is justice, *that* soul and intellect, and again *another* opportunity, and in a similar manner, as I may say, with respect to each of the rest); and further still, since they perceived the participated properties and reasons‡ of harmonies in numbers, and since other things appeared in every respect to be naturally assimilated to numbers, but numbers are the first elements of every nature; hence they conceived the elements of numbers§ to

* Aristotle, says Alexander Aphrodisiensis, speaks in this manner because Pythagoras himself was a little prior to Democritus and Leucippus, and many of his auditors flourished at the same time with these two philosophers.

† The word here used by Aristotle for *property*, as also in many other parts of this work, is *πάθος*, which is literally *passion*. It may therefore suffice, once for all, to observe that wherever *πάθος* and *παθήν* occur, they signify *participated property* or *properties*. Plato also uses *πάθος* in this sense.

‡ *Λόγος*, *reason*, wherever it occurs in Aristotle, either signifies *computation*, in calculations and reckoning, or that inward intellectual discursus commonly called *reasoning*, or a *certain productive and seminal principle*, or *that which is indicative and definitive of a thing*: in the present passage it signifies a *productive principle*.

§ Concerning the numbers of the Pythagoreans, see the notes on the thirteenth book of this work.

be the elements of all things, and that all heaven is harmony and number; and such things as are acknowledged to be evinced both in numbers and harmonies, these they collected together and adapted to the participated properties and parts of the heavens, and to the whole order of things. Likewise, if any thing was found any where to be much deficient, they supplied the defect, that the whole of their treatise might properly accord with itself. I say, for instance, since the decad appears to be perfect, and to comprehend all the nature of numbers, hence they say that the bodies which revolve in the heavens are ten; but as nine only are apparent, they make the tenth to be antichthon, or the opposite earth. But these things are considered by us more accurately in other places*.

However, we have related these things that we may understand from these men what the principles are which they establish, and how they fall into the above-mentioned causes. For it appears that they also considered number as a principle, as matter to beings, and as participated properties and habits. But they assert that the elements of number are the even and the odd; and that of these, the one is bounded, but the other infinite; and that *the one* is composed from both these, because it is both even and odd. They likewise assert that number consists from the one, and that numbers, as we have said, compose the whole of heaven. But others of these assert that there are ten principles, which are denominated according to co-ordination, viz.

BOUND, THE INFINITE:

THE ODD, THE EVEN:

THE ONE, MULTITUDE:

RIGHT HAND, LEFT HAND:

THE MASCULINE, THE FEMININE:

THE QUIESCENT, THAT WHICH IS IN MOTION:

THE STRAIGHT, THE CURVED:

LIGHT, DARKNESS:

GOOD, EVIL:

THE SQUARE, THE OBLONG.

Alcmæon the Crotonian appears to have entertained this opinion: and either he derived this dogma from them, or they from him. For Alcmæon flourished when Pythagoras was an old man. But his doctrine was similar to that of these men. For he says that the multitude of human affairs re-

* *i. e.* in his books de Cælo.

ceives a twofold division (meaning into contraries), yet not distinguished as they distinguish them, but defined in a casual manner: such as white, black; sweet, bitter; good, evil; the small, the great. He therefore spoke indefinitely concerning the rest: but the Pythagoreans declare how many, and what are the contraries. Hence thus much may be understood from both, that contraries are the principles of beings; but from the Pythagoreans we learn the number and quality of these principles: yet it is not clearly determined by them how they may be applied to the above-mentioned causes. But they appear to dispose the elements as in the species of matter. For from these, as things inherent, they say that essence is composed and fashioned. From these things, therefore, the conceptions of the ancients, who asserted that the elements of nature were many, may be sufficiently seen.

But there are some who have discoursed about the universe as if it were one nature: yet all of them have not discoursed after the same manner, neither of that which subsists beautifully, nor of that which subsists according to nature. By no means, therefore, does the discourse concerning these men harmonise with the present speculation of causes. For they do not speak like certain physiologists, who, supposing being to be one, at the same time generate from the one, as from matter; but their assertions are of a different nature. For the physiologists who contend that being is one, when they generate the universe, at the same time add motion: but these men assert that the universe is immovable. Thus far, however, a discourse about these men is adapted to the present inquiry. For Parmenides appears to have touched upon *the one* according to reason, but Melissus according to matter. Hence the former asserts that the universe is finite*, but the latter that it is infinite. But Xenophanes,

* The following remarkable passage from Simplicius in *Phys.* p. 7, on the concord of these ancient philosophers respecting the principles of things, will, I doubt not, be highly acceptable to the liberal reader:

“Perhaps it will not here be improper to digress a little, and point out to the more studious how, though the ancients appear to differ from each other in their opinions concerning the principles of things, yet at the same time they harmoniously agree. For some of them discoursed concerning the intelligible and first principle of things, as Xenophanes, Parmenides, and Melissus; Xenophanes and Parmenides, indeed, calling it *one* and *finite*: for it is necessary that *the one* should have a subsistence prior to multitude, and that the cause of bound and limitation to all things, should be rather defined according to bound than according to infinity; and that the every-way perfect, and which has received its proper end, should be definite, or rather should be the end, as it is the beginning of all things. For the imperfect being indigent, has not yet received the limitation

phanes, who was the first that introduced this doctrine (for Parmenides is said to have been his disciple), did not assert any thing clearly; nor does he appear to have apprehended the nature of either of these, but, looking to the whole of heaven, he says that *the one* is God. These men, therefore, as we have said, are to be dismissed in the present inquiry; two of them, indeed, entirely, as being a little too rustic, viz. Xenophanes and Melissus. But Parmenides appears to have seen more than these where to speak. For, besides being itself, he thought fit to consider non-being as nothing, and hence was necessarily of opinion that being is one, and nothing else; concerning which doctrine we have spoken more clearly in our Physics. But being compelled to follow the phenomena, and conceiving that, according to reason, the one had a subsistence, but, according to sense, the many, he again establishes two causes and two principles, viz. the hot and the cold, or, in other words, fire and earth. But of these he disposes the one, viz. the hot, according to being, but the other according to non-being.

From what has been said, therefore, and from those wise men who adhered to reason, we now receive these particulars. From the first indeed *, that the

limitation of bound. This exception, however, must be made, that Xenophanes places it beyond motion and rest, and every anti-ordination, as being the cause of, and transcending, all things, in the same manner as Plato in the first hypothesis of his Parmenides. But Parmenides beholding it as subsisting according to *same* and *similar* (i. e. as having an essence perpetually the same with, and similar to, itself), and as above all mutation, and perhaps energy also and power, celebrates it as *immoveable*, and *alone* as being exempt from all things. Melissus too, in a similar manner, appears to have contemplated the immutability of this cause, and to have evinced that he is *infinite*, as also *unbegotten*, from the never-failing nature of his essence and the infinity of his power."

The opposition, therefore, of Aristotle to the doctrine of these philosophers, is, as usual, directed to the literal and not to the true meaning of their assertions.

* Aristotle here means those philosophers who speculated the sensible order of things and investigated the elements of bodies, viz. Thales and Heraclitus, Anaximenes and Diogenes, Anaximander, Leucippus and Democritus. Of these, Thales asserted that the element of bodies was water, in consequence of surveying its prolific, nutritive, connective, vivific, and yielding nature; but Heraclitus, that it was fire, from regarding the vivific and demiurgic nature of this element. Anaximenes affirmed that it was air, from beholding the plastic power of this element, and the facility with which it pervades fire and water; and Anaximander, that it was of a middle nature, between fire and air, from the facility with which it receives mutation. And, lastly, Leucippus and Democritus called the elements of bodies atoms, in consequence of regarding the difference of their figures, position, and order. So that, as Simplicius justly observes of the ancient philosophers, some contemplated the intelligible, and others the sensible, order of things. Some investigated

the principle of things is corporeal (for water, and fire, and the like, are bodies); and of these some assert that there is one, but others that there are many corporeal principles; but both agree in placing these principles as in the species of matter. But from certain others who establish this cause, we receive besides this the principle whence motion is derived; and according to some there is one principle, but according to others there are two principles of this kind. As far, therefore, as to the Italic philosophers, and separate from them, others have spoken in a more becoming manner about these things, except, as we have said, that they used two causes; and of these some made the other cause, or that whence motion is derived, to be one, but others to be two. The Pythagoreans, after the same manner, said that there are two principles. But thus much they added, which is peculiar to them, that they did not think the finite, and the infinite, and *the one*, were certain other natures, such as fire, or earth, or any other similar thing; but they were of opinion, that the infinite itself, and *the one* itself, are the essence of these things of which they are predicated: and hence they asserted that number is the essence of all things. After this manner, therefore, they unfolded their opinion respecting these things, and began to speak about what a thing is, and to define; but they treated this affair in a very simple manner. For they defined superficially, and considered that in which a given definition is first inherent, as the essence of the thing; just as if any one should think that the double and the duad are the same, because the double first subsists in two. But perhaps the double is not the same with the duad: and if it be not, one thing will be many*; which consequence happens also to them. From those, therefore, who first philosophised, and from others, thus much may be received.

investigated the proximate, and others the more primary, elements of bodies. Some, again, surveyed the more partial, but others the more total, prerogative of an elementary nature. And lastly others, exploring all the causes and concauses of things, speak differently from each other in physiologising, at the same time that their assertions are not contrary to each other.

* That is to say, if things of which a definition is first truly predicated be the same as the definitions which are predicated of them: but many definitions first accord with one thing (for the Pythagoreans, for instance, called the number 7, both opportunity and Minerva); hence one and the same number will be many things, since many different definitions accord with it. There is, however, no absurdity in admitting that one thing may be many: for every essentially producing cause comprehends in itself, unitedly, all the multitude of which it is the cause, in the same manner as the centre comprehends the summits of all the radii of a circle.

CHAP.

C H A P. VI.

AFTER the above-mentioned philosophers, the business with Plato next succeeds, who in many things followed these Pythagoreans, but who also had some peculiar doctrines different from the philosophy of the Italics. For, when he was a young man, associating first of all with Cratylus, and being familiar with the opinions of Heraclitus, that all sensible things are perpetually flowing, and that there is no science respecting them, he afterwards adopted these opinions. But as Socrates employed himself about ethics, and entirely neglected the speculation respecting the whole of nature; in morals, indeed, investigating the universal, and being the first who applied himself to definitions; hence Plato, approving this his investigation of universals, adopted thus much of his doctrine, that these definitions respect other things, and are not conversant with any thing sensible. For he was of opinion, that it is impossible there should be a common definition of any sensible nature, as sensibles are always changing. Things of this kind, therefore, he denominated *ideas**, but asserted that all sensible things were denominated as different from, and as subsisting according to, these. For, according to him, the multitude of things synonymous is homonymous to forms according to participation; but he only changed the name participation. For the Pythagoreans say that beings are *imitations* of numbers; but Plato, changing the name, calls them *participations* of numbers. They omit, however, to investigate in common what the participation or imitation of forms is. Further still, besides things sensible, and forms, they say that the mathematics are things of a middle nature, differing indeed from sensibles in that they are eternal and immoveable, but from forms in that they are certain similar multitudes, every form itself being only one thing. But, since forms are causes to other things, he was of opinion that the elements of these are the elements of beings. He thought, therefore, that *the great* and *the small* were principles as matter, but *the one*† as essence. For from these, through the participation of *the one*, forms are numbers. He asserted, indeed, that *the one* is essence, and that

* Of the Platonic doctrine of ideas we shall speak largely in our notes to the thirteenth book of this work.

† All this, as likewise all that follows respecting ideas and numbers, will be largely discussed, and the doctrine of Plato and the Pythagoreans on these subjects solidly defended, in the notes to the thirteenth and fourteenth books of this work.

nothing else is called *the one*, in this respect speaking in a manner similar to the Pythagoreans; and, like them, he also considered numbers as the causes of essence to other things. But this is peculiar to him, to make *the duad* instead of *the infinite* considered as one, and to compose *the infinite* from *the great* and *the small*.

Further still: Plato asserts that numbers are different from things sensible; but the Pythagoreans say that they are things themselves, and do not place mathematics between these. *The one*, therefore, and numbers, were considered as different from things themselves, and not as the Pythagoreans consider them; and, as well as forms, were introduced in consequence of dialectic investigation. For the more ancient philosophers were not skilled in dialectic. Through the same investigation, also, Plato made the duad to be a different nature from *the one*, because numbers, except those that rank as first, are aptly generated from it, as from a certain express resemblance of a thing; though, indeed, the contrary to this happens to be the case. For it is not reasonable it should be so. For now they make many things from matter, but form generates once only. But one table appears to be produced from one matter. However, he who introduces form makes many tables. The male, too, is in a similar manner related to the female. For the female is filled from one copulation, but the male fills many. And yet these are imitations of those principles. Plato, therefore, has thus defined respecting the objects of investigation.

But it is evident, from what has been said, that he uses only two causes; that which relates to what a thing is, and that which subsists according to matter. For forms, according to him, are the causes to other things of essence; but *the one* is the cause of this to forms. And what is this cause which subsists according to matter? It is that subject matter through which forms are said to belong to things sensible; and the one is said to be in forms, because this is the duad, or the great and the small. Further still: he attributes to the elements the cause of subsisting well and ill, each to its proper element; and this, we say, some of the more ancient philosophers, viz. Empedocles and Anaxagoras, have investigated. In a brief and summary manner, therefore, we have discussed who those were that have spoken, and how they have spoken, respecting principles and truth*.

* It is well observed here, by Alexander Aphrodisiensis, that Aristotle, conformably to his usual manner of speaking, calls *contemplative philosophy* truth; and this, as it appears to me, with the greatest propriety, for the end of this philosophy is the perception of the highest truth.

But,

But, at the same time, we obtain thus much from them, that of those who have spoken concerning a principle and cause, no one has said any thing in addition to what we have delivered in our Physics; but all of them have spoken obscurely, though in a certain respect they appear to have touched upon these two. For some speak of principle as matter, whether they suppose there is one or many principles, and whether they consider principle as body, or as incorporeal: as Plato, when he speaks of *the great* and *the small*; Empedocles, of *fire* and *earth*, *water* and *air*; and Anaxagoras, of the *infinity of similar parts*. But all these touched upon a cause of this kind; and, besides these, those who have established as a principle either fire or water or that which is more dense than fire, but more attenuated than air; for some assert that the first element is a thing of this kind. These, therefore, had only an obscure conception of this cause; but certain others had some conception whence the principle of motion is derived, viz. those who make friendship and strife, or intellect, or love, a principle. But no one has clearly assigned the nature and essence of this principle. However, they especially speak respecting it who adopt the hypothesis of forms, and the things which subsist in forms. For neither do they consider forms and the things which forms contain as matter to sensibles, nor as if the principle of motion was derived from thence. For they say that they are rather the cause of immobility, and of things being at rest. But, according to them, forms impart the particular being which each individual of other things possesses; and *the one* imparts the same to forms. But that, for the sake of which actions, mutations and motions subsist after a certain manner, they denominate a cause; yet they do not assert that it is a cause, nor do they speak of it conformably to what it naturally is. For those who speak of intellect, or friendship, place these causes as a certain good, but do not speak of them as if for the sake of these either being or any generated nature subsists, but as if from them the motions of things were derived. In a similar manner, those who say that *the one*, or *being*, is a nature of this kind, assert indeed that it is the cause of essence; yet do not say that any thing either is, or is generated, for the sake of this. So that in a certain respect it happens that they assert, and yet do not assert, that *the good* is a cause of this kind; for they speak not simply, but casually. That we have therefore rightly determined concerning causes, and respecting their number and quality, all these philosophers appear to testify, since they were not able to touch upon any other cause. And, besides this, that principles should

should be investigated, either all of them in this manner, or some one of the four, is evident. But after this it is requisite that we should consider in what manner each of these speaks, and what are the doubts which arise respecting principles themselves.

CHAP. VII.

IT is evident, therefore, that those err manifoldly, who consider the universe as one, and as being one certain nature, as matter; and this corporeal, and possessing magnitude. For they only admit the elements of bodies, but not of things incorporeal, though at the same time things incorporeal have a subsistence. And besides this, endeavouring to assign the causes of generation and corruption, and physiologising about all things, they take away the cause of motion. Further still, by placing essence as the cause of no one thing, and not considering the *what*; and besides this, thinking that there might easily be any principle of simple bodies (except earth), they did not attend to the manner in which, according to them, the generation of these from each other is accomplished; I mean fire and water, earth and air. For some things are generated from each other by concretion, and others by separation. But this, with respect to the being prior and posterior, differs much. For that may appear to be the most elementary of all things, from which the elements are generated by a first concretion: but a thing of this kind will, among bodies, consist of the smallest parts, and be the most attenuated; on which account, such as place fire as a principle speak in the highest degree conformably to this doctrine. But every one acknowledges that a thing of this kind is also the element of other bodies. No one, therefore, of those later philosophers who speak of *the one*, has thought fit to consider earth as an element, on account of the magnitude of its parts. But each of the three elements has had a certain arbitrator; for some say that this is fire, others water, and others air. Though why, like the multitude, do they not say that earth also is an element? for they say that earth is all things. Hesiod also asserts, that earth was the first thing generated among bodies; so that this opinion happens to be both antient and popular. According to this reasoning, therefore, if any one should say that any thing belonging to these, except fire, is more dense than air, but more attenuated than water, he will not speak rightly. But if
that

that which is posterior in generation is prior by nature*, and that which is digested and mingled together is posterior in generation, the contrary of these will take place; for water will be prior to air, and earth to water. And thus much may suffice respecting those who establish one cause such as we have mentioned.

But the same things may be said, if any one should think that there are many corporeal principles, as Empedocles, who says that the four elementary bodies are matter: for it is necessary that partly the same things, and partly such as are peculiar, should happen to him. For we see that the elements are generated from each other, as the fire and earth of the same body do not always remain. But we have spoken respecting these in our *Physics* †, and also respecting the cause of things moving, whether it is to be considered as one or two; nor is it to be thought that this has been asserted in a manner altogether irrational. But, in fine, those who speak in this manner must necessarily take away internal mutation. For the cold is not from the hot, nor the hot from the cold. And what contraries themselves will suffer, and what that one nature will be, which becomes fire and water, Empedocles does not say.

But if any one should think that Anaxagoras asserts there are two elements, he will, in the highest degree, think according to reason; for though he does not clearly assert this, yet it follows from necessity, if any one speaks conformably to his doctrine. It is indeed absurd to say, that at first all things were mingled together; both because it must happen that all things prior to this ought to have subsisted unmingled, and because every thing is not naturally adapted to be mingled with every thing. To which it may be added, that from this doctrine, participated properties and accidents must be separated from substances (for mixture and separation belong to the same things); yet if any one follows, and at the same time accurately considers his assertions, he will perhaps appear to have advanced something new. For, at the time when nothing was separated, it is evident nothing could be said respecting that essence. I say, for instance, that it was neither white nor black, nor of any colour between these; but that it was from necessity colourless: for other-

* That is to say, that which is perfect is prior by nature to the more imperfect, although it is rendered posterior by generation. But that which pre-exists in time, is more imperfect. Thus the foundation is more imperfect than the house, and the boy than the man.

† Viz. in lib. iii. de Cælo.

wife

wife it would possess some one of these colours. In like manner, it must have been tasteless: and, from the same reasoning, it could not have been any thing else of the like kind. For it is not possible that it could possess any quality or quantity, or be any actual thing, since something of those things which are called partial forms would be inherent in it. But this is impossible, in consequence of all things (according to him) being mingled together; for they would now be separated. But he says that all things were mingled except intellect; and that this alone was unmingled and pure. Hence it comes to pass, that he proclaims, as principles, *the one* (for this is simple and unmingled), and another thing, as if it were being, such as we consider the indefinite to be, before it is bounded and participates of a certain form. So that this is asserted, indeed, neither with rectitude nor perspicuity; yet he wishes to say something similar to what more modern philosophers have said, and more agreeable to the present phænomena. But these philosophers only speak in a manner accommodated to the assertions respecting generation, corruption, and motion. For they nearly alone investigate an essence, principles and causes of this kind.

But with respect to such, indeed, as make all beings the subject of their speculation, and consider some beings as sensible and others as not sensible, it is evident that they inquire concerning both genera; and on this account any one may be induced to dwell longer on the consideration of what they have said, well or ill, with respect to our present investigation. Those, therefore, who are called Pythagoreans, use principles and elements in a more incredible manner than physiologists. But the reason is, because they do not receive these from sensibles. For mathematical entities are without motion, except those things which pertain to astronomy. Yet notwithstanding this, they discourse about and discuss all things respecting nature. For they generate the heaven, and observe what happens respecting its parts, participated properties, and operations; and into these they resolve principles and causes, as agreeing with other physiologists, that whatever is sensible is being, and is comprehended by that which is called heaven. But, as we have said, and as they also assert, they speak sufficiently respecting causes and principles, and *even ascend to a higher order of beings**, and this more than is adapted to discourses concerning nature; but they are silent as to the mode in which motion, bound, and infinity, the even and the odd, these being alone the subjects of hypothesis, subsist; or

* That is, to incorporeal and immoveable natures.

how

how it is possible that generation and corruption can exist without motion and mutation; or how the operations of the bodies which revolve in the heavens can be accomplished.

Further still, whether any one grants them that magnitude is from these, or whether this is shown to be the case; yet, at the same time, after what manner will some bodies possess levity, and others gravity, respecting which their hypotheses and assertions do not less accord with mathematical bodies than with sensibles? Hence they do not say any thing respecting fire, or earth, or other bodies of this kind; and this, I think, because they do not assert any thing which is their own concerning sensible natures. Again, how ought we to receive the assertion, that the participated properties of number, and number itself, are the causes of things which exist, and are produced in the heavens, both from the beginning, and at present, at the same time that there is no other number besides this number, from which the world is composed? For since, according to them, opinion and opportunity are in this part of the world, but a little higher or a little lower, injustice*, and separation, or mixture, and they adduce demonstration that each of these is number, and it happens from this mode of reasoning, that there is now a multitude of constituted magnitudes, because these properties follow the respective places;—since this is the case, whether is it owing to that number which is in the heavens that each of these exists, or to another number besides this? For Plato says it is owing to another number; though he also thought that numbers are these things, and are the causes of these; but that they are indeed intelligible causes, while these are nothing more than sensibles. Respecting the Pythagoreans, therefore, we shall speak no further at present; for it is sufficient to have thus much touched upon them.

But those who consider ideas as causes, in the first place exploring the causes of these things, introduce other things equal to these in number: just as if some one, wishing to numerate, should think that he cannot accomplish this if there are but a few things, but that he can numerate if he increases

* Alexander Aphrodisiensis informs us that in some copies *το ανικητον*, *the unconquered*, is found instead of *αδικια*, *injustice*. But, says he, *the unconquered* was called by the Pythagoreans the number five, because, in a right-angled triangle, of those sides containing the right angle, one is as three, and the other as four; and the base is as five. Since, therefore, the base is in power equal to both together, it is called *the victor*, and the other sides are said to be *vanquished*. Hence the number five was denominated by them unconquered, being as it were not *surpassed*, but *unconquered* and *superior*.

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their

their number. For nearly forms are equal, or not less than those things, of which, investigating the causes, they proceed from these to those; for, according to each individual thing, there is a certain homonymous form, and besides the essences of other things, there is the one in many, both in these, and in eternal entities. Further still, forms do not appear to have a subsistence, according to any one of those modes *by which we* have shown them to subsist*. For, from some, the reasoning does not necessarily follow; and from others forms are produced of those things, of which we do not think there are forms; for, according to the reasons arising from the sciences, there are forms of all such things as there are sciences; and from that argument for ideas, which is founded in considering *the one* in the many, it follows, that there are also forms or ideas of negations. Likewise, in consequence of the ability to understand something of things corruptible, there will also be forms of corruptible natures; for there is a certain phantasm of these.

Further still, with respect to the most accurate of reasons, some make ideas of things relative, of which we do not say there is an essential genus, and some assert that there is a third man; and, in short, the reasons respecting forms subvert those things which, the asserters of forms are of opinion, have a subsistence prior to ideas themselves. For it happens that the dual is not first, but number, and that which has a relative is prior to that which has an essential subsistence. All such particulars likewise happen, as, being consequent to the opinions respecting forms, are adverse to principles. Again, from the notion according to which we say there are ideas, there will not only be forms of essences, but also of many other things: for there is one conception not only respecting essences, but also respecting other things; and sciences are not only sciences of essence, but also of other things; and ten thousand such like particulars happen. But, from necessity, and the opinions respecting forms, it fol-

* It appears from the commentary of Alexander, that in this place we should read *διδιχαμεν*, and not *διωνται*; for the authority of Alexander's copy is certainly to be preferred to that of any now existing. I have accordingly adopted *δεδιχαμεν* in my version.

It is remarkable too, that Alexander, who was no friend to the Platonic doctrine of ideas, and who, though on the whole an excellent interpreter of Aristotle, did not see his true meaning on that subject, should in this place observe "that Aristotle says *we have shown*, as if he professed, while relating the opinion of Plato respecting ideas, to relate it also as his own, and as if he did not oppose it as a foreign dogma, but discussed and examined it as his own." Indeed it appears to me that this very passage is sufficient to prove that the objections of Aristotle to Plato's theory of ideas are rather pretended than real.

lows,

lows, that, if forms are participable, there are only ideas of essences: for they are not participated according to accident; but it is requisite that things should participate each idea, so far as each idea is not predicated of a subject. I mean, just as if any thing participates of the double, this also participates of the perpetual, but according to accident. For it happens to the double to be eternal; so that forms will be essences; and these both here and there will signify essence. Or what will be the meaning of that assertion, that the one in many is something different from sensible things? And if there is the same form, both of ideas and their participants, there will be something common. For why, in duads, which are corruptible, and in many but eternal duads, is the duad said to be more one and the same than in this, and in some particular thing? But if there is not the same form, the name only will be common; and it will be just as if some one should call both Clinias and a piece of wood a man, at the same time that he perceives no communion whatever between them.

But some one may, in the most eminent degree, doubt what it is that forms contribute to such things as are eternal among sensibles, or to things which are generated and corrupted: for neither are they the causes of any motion, nor of any mutation whatever to these. Nor yet do they afford any assistance to the science of other things (for they are not the essence of these, since in this case they would reside in them); nor do they contribute to the being of other things, since they are not inherent in their participants. For thus, perhaps, they might be considered as causes, as a white colour mixed with a body may be said to be the cause that the body is white. But that assertion, which was first made by Anaxagoras, and afterwards by Eudoxus and others, respecting the temperament of things from similar natures, may be easily confuted; for it is easy to collect many and impossible consequences in opposition to this opinion. But, indeed, neither do other things subsist from forms, according to any of those modes which are generally adduced. And to say that forms are paradigms, and that they are participated by other things, is to speak vainly, and to utter poetical metaphors. For, what is that which operates looking to ideas? for it is possible that any thing may both be, and be generated similar, without being assimilated to that to which it is similar; so that, Socrates both subsisting and not subsisting, some other may be generated such as Socrates is: and, in like manner, it is evident that this will follow, although Socrates should be eternal. Besides, there will also be many paradigms of the

same thing ; and consequently forms, as man, animal, biped ; and at the same time, man himself, or the ideal man, will have a subsistence.

Further still, forms will not only be paradigms of sensibles, but also of forms themselves ; as, for instance, genus, so far as genus, will be the paradigm of species : so that the same thing will be both paradigm and image. Again, it may seem to be impossible that essence should be separated from that of which it is the essence. So that how will ideas, since they are the essences of things, be separated from them ? But, in the *Phædo*, forms are said to be the causes, both that things are, and that they are generated ; though, at the same time, participants will not be generated, even admitting the subsistence of forms, unless that which is motive subsists. And besides this, many other things are made, such as a house and a ring, of which we do not say there are forms : so that it is evident that other things may be, and may be generated, through such causes as we have just now mentioned.

Again, if forms are numbers, how will they be causes ? Whether because beings are different numbers ? as, for instance, man is this number, Socrates another, and Callias a number different from both. Why, therefore, are those the causes of these ? For it is of no consequence, if those are eternal, but these not. But if it is because sensible natures are the reasons of numbers, as a symphony, it is evident that there will be one certain thing, of which they are reasons or ratios. If, therefore, this one thing is matter, it is evident that numbers themselves also will be certain ratios of another thing to another thing. I say, for instance, if Callias is a ratio in numbers of fire and earth, water and air, and of certain other subjects, man himself also, whether this idea is a certain number or not, will be a ratio of certain things in numbers, without being himself number, and will not through these things be some particular number.

Further still : from many numbers one number is produced ; but how is one form produced from forms ? But if form is not produced from forms, but from the unities which are in number, after what manner will the unities subsist ? For, if they are of the same species, many absurd consequences * will ensue ; and if they are not of the same species, nor the same with each

* These consequences he enumerates in the thirteenth book, to the notes on which we refer the reader. In these too (as we have already observed) the reader will find a solution of the preceding and subsequent objections.

other,

other, nor all the rest the same with all, in what do they differ, since they are impassive? For these things are neither reasonable, nor conformable to intellectual conceptions. Besides, it will likewise be necessary to establish another certain genus of number with which arithmetic must necessarily be conversant; and all such things as by some are denominated media. How then do these things subsist, or from what principles do they derive their subsistence? Or why will they be media between things here and those? Besides, each of the unities which is in the duad will subsist from a certain something prior to them, viz. the duad itself. This, however, is impossible.

Further still: since every idea is number, why is it one? And besides this, if the unities are not * different, it will be requisite to speak in the same manner as those who say that there are four or two elements: for each of these does not call that which is common an element; as, for instance, body, but fire and earth, whether body is something common or not. But now the assertion is just as if *the one* consisted of similar parts, like fire or water; but if this be the case, numbers will not be essences. It is, however, evident, that if *the one* is any thing, and this is a principle, *the one* is predicated in a manifold respect; for it is impossible it should be otherwise. But we, who wish to reduce essences into principles, assert † that length consists from the long and the short, and from the small and the large: that superficies is composed from the broad and the narrow; and body from the deep and the low. But how can a plane possess a line, or a solid a line and plane? For the broad and the narrow are a genus different from that of the deep and the low. As, therefore, number is not inherent in these, because the much and the few are different from these, so it is evident that neither will any one of the superior subsist in any of the inferior natures. But neither is the broad the genus of the deep: for thus body would be a certain superficies.

Again: from what principles will points be composed? This genus, therefore, Plato opposes, as being a geometrical dogma; but he calls it the principle of a line; and often asserts are indivisible lines, though it is necessary there should be a cert ound of these. So that, for the

* Instead of *διαφοροι* here, as in the printed text, the sense requires that we should read *αδιαφοροι*.

† Here, again, it appears from the commentary of Alexander that we must read *τιδμεν* instead of *τιδμεται*. The words of Alexander are, "Ponimus dixit, ut constet oratio supradictis. Nam de idearum opinione, velut de propria, differit."

same

same-reason that there is such a thing as a line, a point also has a subsistence. And, in short, since Wisdom investigates the cause of things apparent, this indeed *we omit** : for *we say* nothing respecting the cause whence the beginning of mutation is derived. But, thinking to assign the essence of things apparent, *we say* that there are other essences; and we in vain describe the manner in which those are the essences of these : for, as we have before observed, it is to no purpose to assert, that this is effected by participation. Nor, again, are ideas such causes as we perceive in sciences, and through which every intellect and every nature produces; nor do they touch upon any cause which we say is one of the principles. But, with those of the present day, the mathematical sciences generated philosophy, though they say it is requisite to be conversant with these disciplines for the sake of other things.

Further still, the subject matter itself † may be considered as being rather mathematical matter, and as that which ought rather to be predicated and to be considered as the difference of essence and matter, such as the great and the small; just as physiologists assert that the rare and the dense are the first differences of the subject matter. For these are certain excesses and defects. But respecting motion what ought we to think? For if these (viz. excess and defect) are motions it is evident that forms will be moved: but if they are not motions, whence is motion derived? For the whole speculation respecting nature will be taken away. And besides this, that which seems to be easy will not be accomplished, viz. to demonstrate that all things are one ‡.

For

* Here in the printed text Aristotle says *επιστημον*, and shortly after *λεγομεν*; both which confirm the reading, before mentioned, from Alexander.

† i. e. the indefinite duad.

‡ The following remarkable passage respecting the Pythagoreans is from the Commentary of Alexander on this part: "The Pythagoreans believed that *the one* is the formal principle and cause of all things, in consequence of perceiving that the nature of unity is the cause of being and preservation to every thing (for every thing, so far as it is, is one thing); but, on the contrary, that the dissolution of *the one* into the many, is the cause of destruction. For every thing in its own nature is, so far as it is preserved in that alone. But, when it is dissolved, it is immediately abolished. Their belief of this was partly derived from animals, which, while they continue in one and the same species, are preserved, but perish if they are dissolved; and partly from the several species of things inanimate.

"They were likewise of opinion, that the world itself is on that account preserved, because it endures in *one* and the same state, and that it would be destroyed if it should depart, as I may say, from that *identity* and *unity*. On this account, thinking that the nature of *the one* is the cause

For all things do not become one by expofition, but a certain one itfelf, if any one allows all things. Nor yet this, unlefs he admits that there is an univerfal genus. But this in certain things is impoffible. Nor is there any reason in thofe things which are posterior to numbers, viz. lengths, superficies and folids, with refpect to the mode in which they are or will be; nor do they poffefs any power. For thefe can neither be forms (for they are not numbers) nor things which have a middle fubfiftence (for thofe are mathematical), nor can they be things corruptible: but again thefe appear to be a fourth genus, different

caufe that every thing is, and fubfifts in a becoming manner, they eftablifhed *the one* as the principal caufe of all things; and confidered ideas as the caufes of being to other things, becaufe they are monads, and on this account are the formal caufes of fubfiftence, and of fubfifting in a proper manner to thofe things which are referred and fubjected to them.

“ In the next place, they endeavoured to reduce all things to one proper effence in the following manner. The feveral individuals of the human fpecies being propofed, they confidered the fimilitude in all of them; which finding to be one and the fame in all men, fo far as they are men, and referring all men to this monad, they afferted that they were men through the communion of this one, which they denominated, in all men, *man itfelf*. They reasoned too in the fame manner, with refpect to horfes, dogs, and other animals.

“ Again, comparing men with dogs and other animals, they were of opinion that thefe were animals through a certain monad, which is the caufe of their fubfiftence as animals, and this monad and idea they called *animal itfelf*, and to it referred all animals. Then confidering animals, plants, and other bodies, and finding that thefe are effences through the communion of one thing, they eftablifhed a certain idea and monad of effence, that is, *effence itfelf*, to which they referred all effences. For the fame reason, conceiving that fubftance and quality are beings through the communion of being, they devifed *being itfelf*, to which all beings are referred.”

It muft here be obferved that *being itfelf*, or the laft monad in this quotation, is no other than the *iv ov*, or *one being*, of Parmenides, and which, from being perfectly abforbed in the nature of the ineffable principle of things, *the one* itfelf, is the firft effable *one*; and is the fame with the *utber* of Orpheus, and the *bound* of Philolaus and Plato, concerning which fee the following notes to the third book. See alfo, concerning this firft being, the fecond hypothesis of the Parmenides of Plato.

But the following appears to be the reafon which induced the Pythagoreans to call all things one. Every monad has a certain multitude co-ordinated to itfelf, and every multitude is comprehended by a certain monad, with which it accords. But fince every where the monad binds to itfelf the caufe of multitude, and it is not poffible for multitude to fubfift without this caufe; hence the Pythagoreans, looking to the incomprehenfible caufe of the monad, which caufe is profoundly *one*, venerated being as *one*, contemplating all multitude in *the one*, and celebrating *the one being* (*to iv ov*) prior to the many. Thus, the monad in numbers has a multitude co-ordinated to itfelf, viz. all the numbers as far as to ten, commonly called units, which multitude is comprehended in the nature of the monad; for it is monadic, in the fame manner as all the numbers posterior to ten are decadic. But at the fame time the monad contains in itfelf the caufe of all this multitude. See more on this moft interefting fubject in the notes to the thirteenth and fourteenth books.

from

from those three. And, in short, it is impossible that any one can find by investigation the elements of beings, unless he divides them, since they are manifoldly predicated; especially, if he investigates from what elements they are composed. For it is not possible to admit those things from which action or passion, or the straight, consist; but, if it were possible, they could only be admitted as belonging to beings: so that either to investigate, or to think it possible to possess, the elements of all beings is not true. For, how can any one learn the elements of all things? since it is evident that he cannot possess any antecedent knowledge. For, as he who learns geometry may indeed previously know other things, but cannot have a prior knowledge of any of the particulars with which the science of geometry is conversant, and in which he is to be instructed; so likewise in other things. So that, if there be a certain science of all things, as some assert, he who possesses this science cannot have any pre-existent knowledge. But yet every discipline subsists through a prior knowledge, either of all things, or of certain particulars; and is accomplished, either through demonstration or through definitions. For it is requisite that those things should be foreknown from which definition consists. And the like takes place with respect to the knowledge which is acquired by induction. But if we possess an innate knowledge of things, it is wonderful how we happen to be ignorant that we possess the most excellent of sciences*. Further still, how can any one know from what particulars all things consist, and how will this be manifest? For this is dubious: for some one may doubt just as respecting certain syllables, since some assert that the syllable *za*, is composed from *z*, *d*, *a*†; but others say it has a different sound, and not any one of those sounds that are known. Again, how can any one, not possessing sense, know sensibles? yet it is requisite he should, if those are elements of all things, from which things consist, just as composite sounds from their proper elements. From what has been said, therefore, it is evident that all philosophers seem to investigate, though obscurely, those causes which we have spoken of in our Physics, and that we are not able to assign any other cause different from some one of these. For

* We possess all knowledge in *capacity*; but it requires the assistance of the reasoning power to call it forth into *energy*. And this arises from our union with a corporeal nature, which involves us in the darkness of oblivion.

† Formerly, says Alexander in his Commentary on this part, not only *ζ* was written with two letters (viz. *οδ*), but also *ξ* and *ψ*; the former with *αο*, and the latter with *αυ*; and hence these are called double letters.

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in one respect, all these have been mentioned by philosophers prior to us; but in another respect they have been by no means mentioned. For the first philosophy, as being young, and at its first commencement, appears to stammer about every thing. For Empedocles says, that bone consists from reason (viz. form). But this is the very nature and essence of a thing. However, if this were admitted, in like manner flesh, and every thing else, must either be reason or nothing; for, through this, both flesh and bone, and every other thing, subsist, and not through matter, which he calls fire and earth, and water and air. These things he would necessarily admit, if they were asserted by another person; but he does not speak clearly respecting them. Things of this kind, therefore, we have rendered manifest before. But such doubts as may arise respecting them we shall again relate; for, from these, we may perhaps be enabled to solve future doubts.

ARISTOTLE'S METAPHYSICS.

B O O K II.

C H A P. I.*

THE speculation of Truth is partly difficult, and partly easy ; a token of which is this : that no one can speak of it according to its dignity, and that all men are not disappointed in the pursuit of it, but every one asserts something respecting Nature ; and though each of those who have philosophised has added nothing, or but a little, to this speculation, yet something of magnitude is produced from the assertions of all of them collected together. So that, if this appears to be the case, who, as we are accustomed to say proverbially, will miss the gate † ? In this respect, therefore, the speculation of truth will be easy ; but that all those who philosophise should together possess a certain whole, while at the same time each is destitute of a part, evinces the difficulty of this speculation. But perhaps, since the difficulty is twofold, the cause of it is not in things themselves, but in us. For, *as are the eyes of bats*

* It may not be improper to remind the reader that this book is called by the Greeks the lesser *α*, or the lesser first, and is a kind of preface to the whole of contemplative philosophy ; but unfortunately appears to be mutilated. See more concerning it in the Introduction.

† This proverb, says Alexander, which is used in things easily effected, is taken from archers aiming at a certain mark ; which mark, if narrow, they hit with difficulty, but, if broad, with facility.

to the light of day, so is the intellect of our soul to such things as are naturally the most splendid of all*. But it is not only just to return thanks to those with whose opinions some one may accord, but likewise to those who have spoken more superficially; for they also contribute something, since they exercise our speculative habit: for, if Timotheus had not existed, we should not have had much modulation; and without Phrynus there would not have been such a person as Timotheus. The same thing may be said of those who have discoursed concerning truth: for from some of them we receive certain opinions; but others were the causes of their entertaining such opinions.

But it is right to call philosophy a science speculative of truth: for the end of speculative science is truth, but of practical science, a work: for practical men, if they consider how a thing subsists, yet do not speculate the cause of that thing by itself, but with relation to something else, and as connected with the present time. But we do not know truth † without the knowledge of causes: and every thing is in the most eminent degree that, among other things, according to which the synonymous is present with other things: thus, fire is most hot; for this is to other things the cause of heat. Hence that is most true, which is the cause to posterior natures of their being

* By the intellect of our soul, is to be understood the summit of our dianoëtic part, or that part which reasons scientifically. By this summit we perceive axioms, or self-evident truths; and its energy is wholly intuitive. However, from its connection with sense, and the passive powers of the soul, which impede its proper energy, it has the same relation to things naturally the most manifest and splendid (and these are most simple, and the principles of things), which the eyes of bats have to the light of day. For the vision of these is impeded by the diurnal light through the imbecility of their eyes, though this light is in its own nature eminently visible, and the cause of vision. It must, however, be remembered, that our intellect may, by proper discipline, become so far separated from sense and phantasy, and so strengthened, as, even in the present state, to obtain the vision of these most luminous objects in no contemptible degree.

I only add, that these *naturally most splendid of all things* are evidently those intelligibles, the existence of which is demonstrated by Aristotle in the twelfth book, and which correspond to the *ideas* of Plato. Either, therefore, Dr. Gilles never read this passage, and the twelfth book, or, which is more probable, he did not understand them; for otherwise he never would have so rashly asserted, that Aristotle denied the existence of divine principles subordinate to the cause of all things, and that one principal design of his *Metaphysics* was to explode this doctrine!

† That is to say, the truth of things of which there are causes; for this without the knowledge of cause cannot be known. But things first and principles of which there are no causes are known without the knowledge of cause, by the *self-visual energy* and *projection of intellect* (*νοῦς αὐτοφάνης καὶ ἐπιβολή*).

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true;

true; on which account it is necessary that the principles of things eternal* should be *always* most true: for they are not *sometimes* true, nor is any thing the cause of being to them, *but they are the causes of being to other things*. And hence, such as is the being of every thing, such also is its truth †.

CHAP. II.

BUT, indeed, that there is a certain principle, and that the causes of things are not infinite, neither according to a procession in a right line, nor according to species, is evident. For, neither can *this* thing proceed from *that* to infinity, as, for instance, flesh from earth, earth from air, air from fire, and so on, without any end of the procession: nor can this be the case with that cause *whence the principle of motion is derived*; as, for instance, that man is moved by the air, this by the sun, and the sun by strife, and so on without end. In like manner, with respect to the *final cause*, or that for the sake of which a thing subsists, neither is it possible in this to proceed to infinity; as that walking should be undertaken for the sake of health, health should be acquired for the sake of felicity, and felicity for the sake of something else; and that thus always one thing should subsist for the sake of another. In like manner, a procession to infinity is impossible, with respect to the *formal cause*; for, in those things which have mediums, so that something is last ‡, and something first, that which is first must necessarily be the cause of that which is posterior to it. For, if it were requisite for us to assign the cause of three

* That is, the first principles, or intelligible causes of the universe, of the starry spheres, and of the spheres of the four elements (for these, according to Aristotle, are perpetual, through the incorporeal form with which they are connected). Aristotle's *intelligibles*, therefore, are the *producing* as well as the final causes of things: for, a little further, he says of these principles, that "they are the causes of being to other things."

† Hence it clearly follows, that mathematical genera and species are more real beings than sensibles; for mathematical is much greater than physical truth. According to Aristotle, therefore, *that universal* which is the object of mathematical speculation, does not subsist in the soul by an abstraction from sensibles, for in this case it would not be more but less *real* than sensibles; but, in consequence of possessing more of being than sensibles, from its truth being more splendid, it belongs to a superior order of things, or, in other words, is the essential and legitimate progeny of soul.

‡ That is, as Alexander well observes, not first and last according to time, but according to the formal discrimination of causes.

things,

things, we should say it is the first of the three; for it cannot be the last, since this is not the cause of any thing: nor yet can it be the middle, for this is the cause only of one thing, viz. that which follows it. But it is of no consequence whether one, or many and infinite mediums are assumed. But with respect to things infinite in energy, and the infinite itself, all the parts are similarly mediums as far as to the extremity; so that, in short, if nothing is first, there is no cause.

But neither can a procession to infinity downwards take place, if in a procession upwards there is a principle of causes, viz. so that from fire water shall be produced, from water earth, and so always something else shall be generated. For one thing is generated from another in a twofold respect, not as this thing is said to take place after that, as the Olympic from the Isthmian games; but either as we say a man is generated from a boy undergoing a mutation, or air from water. We say, therefore, that a man is generated from a boy, as that which is generated from that which has already been generated, or as that which is perfect from that which is tending to perfection. For there is always a certain medium; so that, as generation is the medium between being and non-being, in like manner, that which is making subsists between that which is simply being, and that which is simply non-being. But he who is learning is *becoming to be* scientific: and this is the meaning of the assertion, that he who is scientific is generated from him who learns. But water is generated from air, in consequence of air being corrupted. Hence, in the former instances, the things adduced do not revert into each other, nor is a boy generated from a man. For, that which is making is not produced from generation, but subsists after generation. Thus, day is generated from the dawn, because it subsists after it; and, on this account, neither is the dawn generated from the day. But the other instances revert into each other.

In both these cases, however, it is impossible that a procession to infinity should take place. For, since there are mediums, in the one case, it is necessary there should be an end; and, in the other case, the things adduced revert into each other; for the corruption of one is the generation of the other. But, at the same time, it is impossible that the nature which is first should be corrupted, since it is eternal: for, since generation is not infinite in an ascending progression, it is necessary that the nature should not be eternal, from which being first corrupted something is generated. Besides, that for
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the sake of which other things subsist is the end; but a thing of this kind is that which does not subsist for the sake of another, but other things subsist for the sake of it; so that, if that which is last is of this kind, there will not be a procession to infinity. But, if there is not any thing of this kind (or that which is last), there will not be that for the sake of which other things subsist.

Those, indeed, who introduce an infinite process are ignorant that they take away the nature of *the good*; though no one would attempt to do any thing, if he were not to arrive at the end of his undertaking; nor would there be intellect in things of this kind. For he who possesses intellect always acts for the sake of something. For this is a limit; but the end is a limit. But neither can the *formal cause* be referred to another more copious definition; for always the prior definition is more the definition of a thing, but the posterior is not the definition of a thing*. But where there is no first, neither is there that which is consequent to the first.

Further still: those who speak in this manner take away scientific knowledge. For it is not possible that any thing can be known before we arrive at things indivisible†: for how can things be understood, which are after this manner infinite? for the infinite here is not like that in a line, since there is no end to the divisions of a line. But we do not understand divisions unless we limit them; he, therefore, who passes through the infinite will not number the sections. Likewise, with respect to matter, it is necessary that it should be understood so far as it subsists in motion‡. But nothing can be infinite in energy; and if this be the case, that by which infinite can be known is not itself infinite. But if likewise the species of causes were infinite in multitude, neither thus could we obtain a knowledge of things; for we then think that we know when we know causes. But we cannot in a finite time pass through that which is infinite according to addition.

* For the posterior definition is not the definition of a thing, but of its definition.

† i. e. Things which are known without a medium, such as definitions.

‡ As matter is continually flowing, it can only be understood as an infinite flux. But a thing of this kind is not the object of scientific knowledge; because the objects of science are things *stable* and *definite*. Hence, according to Plato, matter is known by a *spurious reasoning*; and, according to Aristotle, by *analogy*.

C H A P. III.

BUT auscultations happen according to habits. For we think that we ought to speak conformably to things to which we are accustomed ; and things which are asserted contrary to those to which we have been accustomed appear more unknown to us, because they are strange and foreign. For that to which we are accustomed is more known. But the laws evince the great power of custom, in which things fabulous and puerile possess, through custom, greater power than the truth of knowledge. Some, therefore, will not attend to those who speak, unless they speak mathematically ; and others do not approve what is said, unless it is spoken paradigmatically. There are also those who think that a poet should be adduced as a witness ; and others expect that all things should be accurately delivered. To others, again, the accurate is painful ; either because they are unable to comprehend it, or because they consider it as nothing more than micrology, or minute discussion. For the accurate possesses something of this kind ; and hence, as in contracts minute attention, so in discourse accurate discussion, appears to some to be illiberal. On this account, it is requisite to be instructed how every thing is to be admitted ; because it is absurd at the same time to investigate science, and the manner in which science is to be obtained ; for it is not easy to accomplish either of these. Mathematical accuracy of discussion is not, however, to be required in all things, but in those only which have no connection with matter : on this account such a mode of discussion is not physical ; for the whole of nature perhaps is connected with matter. Hence, what nature is ought first to be considered* ; for thus the object of the physical science, and whether it is the province of one or of many sciences to speculate causes and principles, will be apparent.

* Aristotle's meaning here appears to me to be this : the order of scientific progression requires that we should be exercised in physical prior to metaphysical speculations. What nature is, therefore, ought to have been previously considered by those who wish to study Metaphysics with advantage.

ARISTOTLE'S

ARISTOTLE'S METAPHYSICS.

B O O K III.

C H A P. I.

IN order to acquire that science which is the object of our investigation, it is necessary, in the first place, to enumerate the particulars respecting which it is first requisite to doubt. But these are the things of which there are different opinions, and whatever besides these may have been neglected and omitted. But, for those who wish to doubt, it is advantageous to doubt in a proper manner. For the power of acquiring posterior knowledge is derived from the solution of prior doubts. But it is not possible for any one to dissolve the bond of any thing, who is ignorant with what it is bound. The doubting, however, of the dianoëtic part of the soul, or that part which reasons scientifically, manifests the bond respecting a thing. For, so far as this part of the soul doubts, so far it is similar to those who are bound; since neither he who is bound nor he who doubts is able to proceed any further. On this account it is requisite, in the first place, to contemplate all the difficulties, both for the sake of these things, and because those that investigate without having previously doubted resemble those who are ignorant whither they ought to go: and, besides this, neither can they know whether they have found, or not, the object of their search. For the end to these is not manifest;

manifest; but is manifest to those who previously doubt in a proper manner. Further still: it is necessary that he should be better fitted to judge, who has heard all the opposite reasons*; which may be compared to the adversaries in a law-suit.

But the first doubt is respecting those things concerning which we have also doubted in the preface †, viz. whether it is the province of one or of many sciences to speculate causes ‡; and whether it belongs to this science, alone to consider the first principles of essence §, or likewise to speculate concerning those

* As it is the business of vulgar dialectic (the subject of Aristotle's Topics) to dispute from probable arguments on both sides of a question; in like manner, it is the province of scientific dialectic, to proceed through all opposing reasons in its investigation of the truth. The latter, however, differs from the former in this, that its reasoning is always demonstrative, and not merely probable.

† That is, in the first book; for he there doubts concerning causes.

‡ What Aristotle inquires is this: Because there is an effective, also a formal and a final cause, and in some things a material cause, does he who knows a thing itself know all its causes, so far as he has one science? or, are many sciences conversant with many causes, so that one knows the effective, another perhaps the material or the final, and another the formal cause?

To this we reply, that one science considers all these; for, any one of them being unknown, there will not be science of a thing. But, if his discourse respect wisdom, it would be very ridiculous to think that it is ignorant of good or form, or the generative cause of things.

§ He inquires whether the first philosopher, knowing the causes of being, knows also that truth which is contained in propositions eminently the first and immediate; or, whether it is the province of one person to know the principles of being, but of another to know the first and most universal axioms.

But it is evident that it belongs to the same person to know both these and those; for he would not be perfect, if ignorant of either. Indeed, from the knowledge of both, he will possess the science of sciences; from the speculation of axioms knowing demonstrative principles which administer to other sciences. Thus, for instance, he knows the axiom which is subservient to dialectic, and to all sciences which employ syllogism, viz. that it is impossible that the same thing can be affirmed, and at the same time denied, of the same: also, that which is employed by geometry, viz. that those things which are equal to the same thing are equal to each other; that which the natural philosopher uses, that nothing can be generated from that which is not; and that which is common to all sciences, that good is the ultimate object of desire.

As, therefore, it belongs to one and the same person to possess science, and that which is known by science; and he who has not the one will be destitute of the other: in like manner, it is the province of one and the same man to consider the causes of beings, and demonstrative principles, through which he will view beings themselves, and the different kinds of knowledge co-ordinated to different beings, as from a lofty tower of intellectual speculation.

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principles from which all demonstrations are formed: such as, whether it is possible that one and the same thing can at the same time be affirmed and denied; and other things of this kind. And, if it is the business of this science to be conversant with essence*, whether there is one or many sciences about all essences; and, if there are many, whether all of them are allied to each other†, or some of them are to be called wisdom, and others something else. This, also, it is necessary to investigate, whether we must say that sensible essences alone have a subsistence, or others besides these‡; and whether there

* He inquires whether, if it should be granted that wisdom is conversant with being, it will be conversant with all being; or, whether the knowledge of being will be distributed among many sciences.

To this we answer, that it is the province indeed of wisdom to know all beings so far as they are beings; yet this does not exclude the existence of other sciences, among which the parts of being may be distributed, though they may consider such parts differently, and more generally. These sciences are arithmetic, astronomy, physics, medicine, and whatever others there may be of this kind.

† This is what remains of the former inquiry. To this it may be replied, that the species of the whole of philosophy, as, for instance, the first philosophy and physics, are allied to each other and to the whole; but that those sciences which are not principally conversant with essences, as, for instance, the mathematical sciences, as not being equal to wisdom in magnitude and dignity, can never be said to be co-ordinated to it. Whence, neither are there many wisdoms, but one which is most true. However, these sciences, considered as proceeding from wisdom, and depending on the principles flowing from it, without being able to be removed from it in the smallest degree, may be said to be allied, both to each other, and to that most general science from which they are derived. And, as intellect is the transcendent parent of all sciences, (viz. is not distributed among them, but has a subsistence separate from the multitude by which it is participated), though principally of wisdom, which it constitutes as a monad comprehending causally in itself every species of knowledge, and through it imparting the principles of particulars: hence, neither are all sciences equally excellent, but that which is nearer to is more venerable than that which is more distant from wisdom; but that which recurs to wisdom through many sciences is inferior to all the intermediate sciences.

But neither are they allied after the same manner: for arithmetic is more allied to geometry, and to the other mathematical sciences, than to physics and medicine. But the divisive, the analytic, the definitive, and the demonstrative science more accord with each other than with certain other sciences, because they are proximately suspended from wisdom itself, and through it, together with a most splendid fire, the fire of intellect, are imparted to souls capable of being led back to their paternal port.

‡ Aristotle inquires, whether in conjunction with sensible substances, as the heavens, the earth, the middle elements, animals and plants, there are certain other essences, viz. intelligible essences.

To this we reply, that the apparent order of things, compared with true beings, or incorporeal natures, may be more justly called generation than essence.

is one genus or many genera of essences*, according to the opinion of those who introduce forms, and place things mathematical between these and sensibles. These things, therefore, as we have said, must be considered †; and likewise,

* This also is a part of the preceding problem; for in what follows he considers that problem and this as one. But what he says is to this effect: Though it should be granted that there is a certain essence besides that which is the object of sense, will it be of one species, or, at least, of two species? For Plato, in the sixth book of his Republic, appears to consider the dianoëtic essence as subsisting between an intellectual and sensible nature; or, in other words, he places an essence which is apprehended by scientific reasoning, between that which is the object of the intuitive vision of intellect and that which is the subject of the passive perception of sense. Under this dianoëtic essence he places the mathematical sciences, and not those natures which are the objects of imagination and opinion; for these are not essences, but the images of essences. He also distributes under this essence whatever the soul essentially contains in herself, the geometric, arithmetic, and harmonic principles of which the intellect of the artificer of the universe established in soul, as is shown in the Timæus of Plato.

In answer, therefore, to Aristotle's inquiry, we reply, that it may be said that there is one intelligible essence of all things, when we alone separate a sensible essence from it, according to a division of all things into two. It is also possible to subdivide the unapparent and dianoëtic essence, into that which is properly intelligible and that which is properly dianoëtic, according to the division made by Plato in the Republic. We may also subdivide each of these; for there are many intelligible and intellectual orders, as is copiously and beautifully shown by Proclus on Plato's Theology. And the order of souls, to him who knows how to distinguish beings according to species, will be seen to possess much essential diversity.

† Aristotle here inquires, whether wisdom considers the essences of things alone, or essential accidents. To this we reply, that it considers both essences and things essentially inherent; by the analytic method receiving the principles of being; by the divisive and definitive method considering the essences of all things; and, by the demonstrative method, concluding such things as are essentially inherent in essences. But, in the most simple and properly intelligible essences, there is no such thing as a distinction into substance and accident; and therefore they are neither capable of definition nor demonstration; but are alone to be apprehended by intellectual projection (*νοερα προβολη*), as Aristotle himself asserts in many places: "for intellect (says he) either comes into contact, or does not, with its object."

But middle-essences are demonstrable according to the things which they essentially contain; essential accidents supervene universal reasons considered by themselves, and as adorning a sensible nature, and therefore demonstration is also conversant with these; and in material species, in individuals, and in sensibles, such things as are properly accidents are perceived by imagination, and which are present and absent without the corruption of their subject. These again, being worse than demonstrable accidents, are apprehended by assimilative reasonings (*δια τα αναλογηματα*), not indeed by a wise man so far as a wise man, but perhaps by physicians, and natural philosophers, and all of this kind.

I only add, that, of the scientific methods above enumerated, the analytic proceeds in a retrograde order to that of the rest. For division proceeds from universals to particulars; defini-

likewise, whether the speculation is alone respecting essences, or also respecting the essential accidents of essences. And, besides this, whose province it is to speculate concerning *same* and *different**, the *similar* and *dissimilar*, *contrariety*, *prior* and *posterior*, and every thing else of this kind, about which those who are skilled in dialectic endeavour to speculate, making their inquiry from things probable alone.

Further still, respecting such things as are essential accidents to these; and not only what each of these is, but likewise if one is contrary to one.

tion, from things simple to such as are complex; and demonstration, from causes to things caused. But analysis runs back from particulars to universals; from the complex to the simple, and from things caused to causes.

* That it is the business of a wise man, according to Aristotle, to consider essences, and their essential accidents, is evident, from what he says in the beginning of the fourth book, viz. "that there is a certain science which considers being so far as being, and its essential properties."

But that the things which now present themselves to our consideration are in the highest degree essentially inherent in being, is evident from hence, that they pervade through all beings. For sameness and difference, similitude and dissimilitude, and such other things as he now proposes to consider, are not apparent in some beings and absent from others; but, beginning on high from intelligibles, and adorning every intelligible and divine nature, they proceed through the essence of soul to the nature of the universe, to the heavens, and the realms of generation, and impart to beings identity, equality, and similitude, from the all-beneficent nature of *the one*.

But diversities, dissimilarities, inequalities, contrarieties, prior and posterior, and every thing of this kind, proceed from a most prolific and never-failing cause of all things, viz. a dual of infinite power (symbolically called chaos by Orpheus and Hesiod), and are imparted to visible and sensible natures; so that neither is there a nature subsisting between impartible and partible essences, such as soul; nor so abstracted from all things by transcendence of essence; nor so abject, by subsisting at the extremity of sensible effects, which is not distinguished by these species.

Hence Plato, in the *Sophista*, investigating the genera of being, which pervade through all things, enumerates sameness and difference, essence, permanency and motion. The natural philosopher and the mathematician use these genera as things credible (*πιστευτικας*); but the first philosopher employs them scientifically and intellectually. Whence Aristotle also, in the ninth book of this work, discourses concerning all these, and latently shows, that it is the province of a wise man to have a scientific knowledge of these. For, if one who is skilled in his dialectic discourses probably of these, as he asserts here, and in his *Topics*, who but the first philosopher, or the wise man, will consider them scientifically?

Should it be asked, why Plato among these genera enumerates motion and permanency, but Aristotle omits to mention them; it may be replied, that Plato, indeed, knowing that motion and permanency were contained in the amplitude of divine and human affairs, necessarily enumerates these in the genera of beings; but Aristotle, who thought that motion and permanency alone pertained to natural bodies, was very consistently of opinion, that the peculiarity of these genera should not be extended to all beings.

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And again, whether genera are principles and elements*, or those things which are inherent in a thing, and into which it is divided. And if this is

* Two things are here proposed by Aristotle: one, if the genera of things ought to be called principles and elements; principles, indeed, as causes, but elements, as having a greater simplicity of subsistence, because definition is at last resolved into these: or, whether those things which are inherent in any being, into which it is divided, and which are properly considered as belonging to it, ought to be thus denominated.

But the second object of inquiry is, whether, though it should be granted that the genera of things are principles, and not the things into which any being may be divided,—whether, I say, such as are more comprehensive, and are extended to a greater multitude of things, ought to be called principles and elements, or rather such things as are proximately predicated; as, for instance, of Socrates, whether the principle is animal or man.

In answer to the first question, it is necessary to ask, what principles are here the objects of inquiry? For, if they are the material or the formal, such things as are inherent are principles; but, if they are the effective or the final, genera themselves are principles; not, indeed, those genera which are of posterior origin, for these subsist in effects themselves. Thus, for instance, in Socrates, both man and animal are contained; which can neither be the effective nor final principles of man, since they are parts of his apparent essence, and, in consequence of being indigent of a subject, have not a separate energy. But, if there are any genera prior to particulars (as we shall fully evince there are in the notes to the thirteenth book), which are the causes of sensibles, which are beheld in the productive principles of the nature inherent in the mundane wholes, and which still prior to this shine in the forms of the mundane soul, and in the intellect of the artificer of the universe, these may be deservedly called the causes of sensibles. But, in these, the final cause is to be assigned together with the effective, because it appears more manifestly in these, as being established in the vestibule of the good itself.

The answer to the second inquiry is more manifest. For, if we consider genera and species as things of posterior origin, *i. e.* as merely subsisting in the phantasy by an abstraction from sensibles; those genera which are more proximate to the substances called first, or, in other words, to corporeal substances, will be more eminently substances, and on this account will partake more of the nature of principles than those which are less substantial by being more remote from sensibles. But, if we consider genera and species properly so called, and which are the effective principles of particulars, both natural and demiurgic, it is manifest that, among these, that which is more comprehensive, and which extends itself to a greater multitude, is a more divine cause, since without this nothing can possess either essence or energy.

Manifest signs of these things are exhibited by logical genera and species. For, of whatever species is predicated, of that also genus is predicated: but the converse is not true. Genus, therefore, is more comprehensive than species. Thus, of whatever the species man is predicated, of that also animal is predicated; but man is not predicated of whatever animal is predicated. By transferring, therefore, predication of any particular to production, or, in other words, considering predication to be the image of causal energy, we shall pass from images to true genera and species, and speculate their mutual connection, their transcendence and subjection, and the dignity which they possess as the producing causes of things.

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the case with genera, whether they are such things as are predicated the last of all of individuals, or such things as are first; as, for instance, whether animal or man is a principle, and is more a principle than that which is an individual. But it is especially requisite to inquire, and *seriously consider* *, whether there is any essential cause besides matter, or not, and whether this is separate, or not: likewise, whether it is one, or if there are many such causes; and whether there is any thing besides a collected whole †, or that which is a composite (but I mean by a collected whole, when any thing is predicated of matter); or whether there is nothing besides: or whether this is the case with some things, and not with others; and, if this be the case, what kind of beings these are.

Further still, with respect to principles, whether they are bounded in number or species ‡, viz. whether this is the case both with principles subsisting in

* The ancient natural philosophers confined themselves to the speculation of matter alone, and called the principle of things water, or air, or fire; but others beheld indeed an effective cause, but such a one as is inseparable from matter, as the Stoics, and others of greater antiquity. Others again admitted a cause separate from nature, as both Aristotle and Plato; the former of whom openly admits that this cause is the object of desire to all things; and, latently, that it is also the generative principle of the universe, as we have shown in the Introduction to this work. But Plato openly ascribes to it both these prerogatives. This being the case, Aristotle very properly inquires, which of these opinions is the more true: and it is evident that it must be the latter, which was adopted by him and Plato. But, when he again inquires whether there is one separate cause, or many; we reply, that there is both one and many, the many being co-ordinated to the one, and extended to it, as to the proper object of desire, as Aristotle also shows in the twelfth book of this work.

† Aristotle here inquires whether, besides that which is composite and specific, there are universals, and essential species; and if there are ideas of all things natural, artificial, beautiful, base, good, evil, perfect, and imperfect: or whether there are ideas of some of these, but not of others; and, if this be the case, of which there are ideas, and of which not.

To this we shall at present briefly reply, that there are no ideas of things base, imperfect, and evil; for these subsist in the ultimate progressions of nature, and this, because partial souls, such as ours, are unable to vanquish the infinity of matter. Yet there are fabricative forms of essences naturally permanent, in the same manner as there are of things artificial in art. That there are forms, indeed, of things artificial, Aristotle openly admits, asserting in many places, that the material is perfected from the immaterial house, as in the sixth book of this work: and that he also occultly admits that there are exemplars of things which perpetually subsist according to nature, we have shown in the Introduction.

‡ Aristotle admits, indeed, that principles are bounded; but he doubts whether they are bounded in number, in the same manner, for instance, as the four elements; for these are four in number; and therefore body is not produced from air and fire simply, but from mundane fire and

in reasons (formal causes), and those which subsist in a subject; and whether there are the same or different principles of things corruptible and incorruptible*. Again, whether all principles are incorruptible, or whether the principles of things corruptible are themselves corruptible. Further still, that which is the most difficult of all, and possesses the greatest ambiguity†, is, whether

and air, as subsisting in the sublunary region. Or whether the principles of things are first bounded in species, in the same manner as the twenty-four elements of speech; for that these are bounded in species, and not in number, is manifest from hence, that the whole of the letter *a* is in many syllables, and that one part of it is not in the syllable *ba*, and another part in the syllable *fa*; as air with one part of itself constitutes this body, and with another part of itself a different body. He inquires, therefore, whether principles are bounded in number or species. To this we reply, that, if they are bounded in number, they are also bounded in species; but it is evident that, if they are bounded in species, it does not follow that they are altogether bounded in number. For the twenty-four letters of the alphabet are bounded in species, but are indefinite as to their number.

* These things seem to be proposed as two objects of inquiry, viz. whether there are the same principles of things corruptible, and of things incorruptible. For, if there are the same, in what manner do they make these things to be incorruptible, but those corruptible? But, if different, whether are these incorruptible, but those corruptible?

But, in whatever manner the division may be made, we reply, that the principles of things incorruptible are entirely the principles of every kind of beings; for the prolific and infinite energy of such principles can never be circumscribed. But the principles of things corruptible are not all of them the principles of incorruptibles. Hence, the proximate principles of corruptibles are not the principles of any thing else. Yet neither are all these principles corruptible. For the circulation of the heavens is attended, according to Aristotle, with an effective cause, yet it is not corruptible.

There are also other incorruptible as well as corruptible causes of generated natures; for, if, as Aristotle asserts, man and the sun generate man, it is manifest that man has both a corruptible and incorruptible cause. The same also takes place in horse, dog, and every sublunary species; for each of these has a partial and an universal cause: but that principles which are more universal should be corrupted, is the most of all things impossible; for they can never be generated from any thing, nor can other things be generated from them.

These things are not only rightly asserted by the divine Plato, but also by Aristotle: for, in the twelfth book of this work, he introduces the principles of things eternal, as separate and immaterial forms, and as the objects of desire to all things, and says, that there are certain eternal principles of things corruptible. In the next place, he frequently, and in what follows, generously shows that generation would not be, unless there was some eternal cause of it.

† It is evident here, that Aristotle did not consider the opinions of the ancients respecting principles to be despicable; but, on the contrary, that he thought they deserved much attention.

We say, therefore, that all things would not desire the first being, unless they derived their perfection

whether *the one* and *being* are, as the Pythagoreans and Plato say, nothing else than the essence of beings; or this is not the case, but something else is the subject, as friendship, according to Empedocles, but according to others fire, or water, or air. And again, whether principles are things universal*, or have a subsistence

perfection from thence; and that, as they eternally depend on this, they also eternally from this receive their being. Hence, if the first being is desirable to all things, and is the cause of being to all, it produces from itself both true beings and intelligible species. But as this first being, though the principle of all things, is after a manner co-ordinated with multitude, and therefore has a certain alliance with it; hence, prior to this first being, it is requisite to consider a super-essential one, ineffably abstracted from all beings in simplicity and excellency, and which, though it cannot be properly denominated, yet may be more properly called *the one* than any thing else, because it is the source of union to all beings, that is, of assimilation to itself. The Pythagoreans, therefore, necessarily placed *the one* and *being* at the summit of the whole of things; *this* imparting the cause of unity and of all good to beings themselves, but *the other* the proper principle of being to other species.

Empedocles too, by friendship, appears to signify nothing else than that *one* which is co-ordinated with the indefinite duad; so that *friendship* and *strife* with him are the same as *the one* and the *duad* of the Pythagoreans, or the *bound* and *infinity* of Plato. From these two Empedocles produces the first being, all intelligibles, and the sensible universe. For, if friendship, according to this philosopher, is the cause of union to the intellectual sphere which subsists after *the one*; but strife is the cause of multiplication, diversity, and prolific progression; is it not evident that *friendship* is with him analogous to the above-mentioned co-ordinated one, but *strife* to the indefinite duad? For, as Empedocles was a Pythagorean, how can it be supposed that he would adulterate the Orphic or the Pythagoric principles?

But if Thales called water *the one* and *being*, but some other dignified air or fire with these appellations, such opinions have been reprobated by many of the ancients, and especially by the demoniacal Aristotle.

* Principles, properly so called, are to be considered as subsisting above universal genera and species, and much more above particulars; for thus they truly subsist:

In matter particulars are considered; but in nature and soul the universal generated causes of sensibles pre-exist: nature, indeed, possessing the most special species, from which she proximately generates things material and particulars; but soul previously assuming these, and, prior to these, more universal reasons, through which dividing genera themselves, and again uniting the multitude of her reasons, she considers all things by an ascending and descending progression, and operates according to a divisive, analytic, and definitive energy. But above these are placed fabricative or demiurgic species, and above these again the principles of those mighty wholes, the mundane spheres. And thus much in answer to the first inquiry.

To the second question we reply, that a subsistence in capacity must be entirely excluded from principles properly so called. For such a subsistence is imperfect, unprolific, and more adapted to matter. But to these a subsistence in energy rather belongs, except that some of them cannot be said to be in energy, but are rather energy itself. But the principle of all things (if it be lawful

subsistence like particulars; and whether they subsist in capacity or energy. Further still, whether they subsist in any other manner than as things motive; for these things may afford matter for abundant doubt. And, besides all this, whether numbers, lengths, figures, and points are certain essences or not*: and if they are essences, whether they are separated from sensibles, or subsist in them. For, *respecting all these particulars, it is not only difficult to discover the truth, but neither is it easy to doubt well in a rational manner.*

CHAP. II.

IN the first place, therefore, we must inquire respecting those things which we first mentioned, whether it is the province of one or many sciences, to speculate all the genera of causes: for how can it be the business of one science to know principles †, since they are not contrary to each other?

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lawful so to speak) is not only above a subsistence in capacity and a subsistence in energy, but is even above energy itself; for he is above being to which energy is subordinate.

To the third question we reply, that those principles are immovable, which are the causes of things eternal; but that those are moved which subsist among the causes of things generated and corrupted, as the sun and the ethereal circulation.

* To this we reply, that the essence of these is manifold: for, in the works of nature, any one may see figure, number, physical superficies, and physical line and point. These also subsist in our phantasy and opinion, viz. continued quantity in imagination, and number in opinion; the latter being more immaterial than the former; and receive their perfection from the essential species of the soul.

These objects, therefore, of imagination and opinion, participate indeed of essence, but are not essences. They may, therefore, rather be reduced under quantity, or quality, or some other predicament; but the essential reasons of the soul, of which these are images, may be deservedly called essences.

But he who is able to see the paradigms which subsist in intellect and intelligibles will perceive number, and figure, and magnitude itself, there enumerated.

† Aristotle syllogises as follows: Causes different in species are not contraries. Of things which differ in species, and which are not contraries, there is not one science. There is not, therefore, one science of causes. And in the second figure, causes different in species are not contraries. Things which are under one science, if they differ in species, are contraries: causes, therefore, are not under one science.

It is plain, however, that Aristotle is not serious in what he now says; since the major proposition is altogether false. For it does not follow, that, if there is one science of contraries,

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Besides, with many beings all things are not present*. For, how is it possible that the principle of motion, or nature of *the good*, can subsist in

there is not one of things not contrary; nor that, if contraries are under one science, things which are under one science must be immediately contraries. Nor perhaps do causes always differ in species, as Aristotle himself observes in the second of his *Physics*. "For," says he, "the end and the agent sometimes concur in species."

* He again syllogises as follows: The first and most beautiful sciences are conversant with things immoveable. Sciences which are conversant with things immoveable by no means have a knowledge of all causes, because in things immoveable there is neither the efficient nor the final cause. The first, therefore, and most beautiful sciences have by no means a knowledge of all causes.

Here, again, Aristotle assumes the mask; since the major proposition is again false. For, of sciences, let the speculative be the first and the most beautiful: but of these, natural philosophy, which is conversant with things moveable, must not be placed in the first rank, since mathematics rather, and the first philosophy, are better than this. But why do not all these sciences consider the causes of sensibles? Because, it may be said, neither have immoveables an effective or final cause. This, however, is far from being the case; since these also originate from a principle, and do not proceed to beings from chance. For every kind of being is either a principle, or from a principle. But multitude cannot be a principle; on this account, therefore, they will have both an effective and a final cause. For things immoveable both know and are known for the sake of good.

In the next place, that which was proposed from the first is different from this inquiry: for it was not proposed to consider, whether, the cause failing, there can be science of a thing, but whether, admitting the subsistence of different causes, they are not considered by one science, but by many; and that they are not, is not at present proved. The opposite, indeed, to this may be rather inferred: for, if all sciences which are conversant with things immoveable, know all the causes which are existent in the subjects of their speculation, and despise nothing which is inherent in them, wisdom also will know all the causes of being so far as it is being.

In the third place, the reasoning of Aristotle endeavours to prove, that the mathematical sciences have not a final cause. However, he falsely assumes, that a subsistence for the sake of something is the end of action, but not of speculation; for there are not only ends of actions, but, much more, of contemplations themselves. Thus, we desire to contemplate for the sake of good, of an assimilation to divinity, and of our true preservation. But the end of actions is partial, and is not properly an end, since it must always refer to contemplation; for the sake of which alone it subsists, as is beautifully shown by Plotinus in his book on Contemplation, Nature, and *The One*, and to my translation of which I refer the reader. But, if geometricians do not assign the end, when they demonstrate things essentially inherent in figures, it is by no means wonderful; for neither do they consider the subject, whether it is, or is not; nor are they busily employed about the end; nor do they attend to any thing besides the essential properties of figures or magnitudes. Compared, therefore, with the first philosopher, they are unscientific;

in things immoveable? since every thing which is essentially and through its own nature good is an end; and so is a cause, because other things are generated and subsist for its sake. But the end, and that for the sake of which a thing subsists, are the end of a certain action. But all actions are accompanied with motion: hence, it is not possible that in things immoveable there can be this principle, or a certain good itself. On this account also, in the mathematical sciences, nothing is evinced through this cause, nor is any demonstration produced from it, because it is better or worse. But no one makes any mention whatever of any thing of this kind; so that certain of the sophists, such as Aristippus, revile these sciences on this account. For in other arts, says he, and even such as are sordid, as in the tectonic art and that of the currier, all things are asserted on account of the better or the worse; but the mathematical sciences do not pay any attention to things good and evil.

But again, if there are many sciences of causes, and each is conversant with a different cause, which of these must we assert to be that which we investigate? or, who, among those that possess these sciences, will have a scientific knowledge of the thing investigated? For it happens, that all the modes of causes are present with the same thing: Thus, for instance, in a house, the cause *whence motion is derived* is art, and the builder; but that *for the sake of which it subsists* is the work; the *matter* is earth and stones, and the *form* is the definition. From those things, therefore, which were formerly decided by us, viz. which of the sciences ought to be called Wisdom, it seems reasonable, that each should be thus denominated: for that science which is the most principal and the most honourable, and which it is not just other sciences that rank as servants should contradict, is the science of the end and

tive; for, as their principles are hypothetical, and therefore not properly known; and as the end and medium consist also from things which are unknown, by what contrivance, says Plato, can a deduction from these be called science? That is, how can it be called science, according to the highest and most true subsistence of science? But the first philosopher beholds in himself both *why* the circle is such a figure as it is defined to be, and what it imitates among true beings. He likewise sees what is the first of figures, what their order, and whence they are at the same time connected with the cause of good. Lastly, those are to be derided who deny, that the mathematical sciences are the offspring of intellect, though they are conversant with the true conclusions of propositions producing science. For, whence is the truth derived which they contain? Whence the order, which is at the same time attended with an indescribable beauty? Whence their power of opening and elevating the rational eye of the soul, if, by a much greater priority, they did not largely participate of intellectual good?

the good* [and, as it appears, ought to be called wisdom†]; for the rest subsist for the sake of this.

But, so far as wisdom is defined to be the science of first causes, and of that which is especially the object of knowledge‡, the science of essence may not unjustly vindicate to itself the name of wisdom. For, since the same thing may be known in many ways, we say, that he rather knows who knows a thing from its inherent properties, than he who knows from particulars which do not pertain to that thing. But, among these, one knows more than another; and this is especially the case with him who perceives what a thing is, and not of him who apprehends the quantity or quality of a thing, or what it is naturally adapted to do or suffer. Further still, in other things also §, we

* For other things are for the sake of this. For, so far as wisdom possesses this prerogative, that it is the principal and mistress of other sciences, there will be no other science than that which respects the end for the sake of which other things subsist. For the end itself is dignified with a power which leads to other causes; since those things for the sake of which all things are produced preserve all things in the world, in a republic, in an army, and in each of us. But all things are produced for the sake of good and the end.

† This part within the brackets is omitted in the printed Greek text; but is in the text of Alexander, and appears to be very properly inserted.

‡ So far, says he, as wisdom is conversant with the first causes, and with that which is most eminently the object of scientific knowledge, that science which most eminently knows form itself is wisdom. And in the end he adds, that his knowledge of things surpasses that of all others, who knows them through their proper mediums: for some one may have a certain knowledge of a thing through privation or negation, as is the case with him who knows that a point is impartible, and that a divine nature is immortal; but he has a superior knowledge of these, who knows them affirmatively, and through those things which they essentially contain; as, for instance, that a point is the extreme of a line, and a divine nature an eternal being, sufficient to itself, good, and the cause of things eternal. But he has a still superior knowledge of these, who cannot indeed speak respecting the quality or quantity of things, their energies or participated properties (for all these are posterior to essence, and the second things from it), but is able to point out the essence of a subject itself; for he who can effect this possesses the most perfect of all sciences.

§ Essences indeed are known by definitions; and hence the first science is the definitive. But things essentially inherent are known by demonstration; and hence the second science is the demonstrative. But that science which considers form itself, and at the same time knows all these, is both definitive and demonstrative; definitive, indeed, essentially, because this consists in knowing the essence of a thing; but demonstrative, because he who assigns the causes of things, does not cease demonstrating till he arrives at that which is essential. Thus, it is not sufficient to say, that fire has a power of separating the parts of bodies, but it is requisite to show why it possesses this power; and, till we recur to definition, and evince that the very essence

we then think that we know each of those things of which there are demonstrations, when we know what each is; as, for instance, we then know what the squaring of a right-lined figure is, when we know that it is the invention of a mean proportional; and in a similar manner, with respect to other things. But with respect to generations, actions, and all mutation, we then especially know, when we know the principle of motion. This, however, is another principle, and is opposite to that which ranks as the end; so that, to contemplate each of these causes may appear to be the province of another science*.

With respect, however, to the principles of demonstration, it is doubtful whether the speculation of these is the province of one, or of many sciences: but I call the principles of demonstration those common opinions from which all men demonstrate†: such as, it is necessary that every thing should be affirmed

essence of fire consists in this, we shall not speak demonstratively. So that demonstration is alone the province of him who has a knowledge of form: and this cause which is assumed from definition is the first cause; not, indeed, according to assignation [*ἀποδοτικῇ*], (for perhaps, according to this, it is the last), but it is naturally the first, at which the demonstrator, when he arrives, rests. Thus, why is a politician desirous that there should be music and gymnastic in a city? That he may instruct the citizens. Why does he instruct them? That he may make them scientific. Why this? Because they are adapted to receive science. Why are they so adapted? Because they are rational beings. And why rational beings? Because in this the very essence of human nature consists. Here then we see a knowledge from first causes; and the definition of a thing is the best cause of demonstration. Thus, for instance, why is the light eclipsed? Because it is obstructed by the earth: we have therefore a definition of a lunar eclipse; for a lunar eclipse is a privation of the light of the moon, on account of the obstruction of the earth; of which if you would form a demonstration, you have only to change the position of the terms, as Aristotle observes in his last Analytics. And again, to make a square equal to a given rectangle, is nothing more than the invention of a middle line: for, let one side of the rectangle be equal to 9, and the other to 4, the area will be 36, the mean proportional between which is 6, the side of the square required.

* That is, because the science which knows the cause of a thing is wisdom, it is not the business of many sciences to consider cause, but this is alone the province of one science.

† Aristotle here asserts, that demonstrative principles are common conceptions, considered as not disposing or exciting us to action: for all things desire their proper end, from a common conception, which when men are not able to obtain by their own exertions, they fly to a divine nature for assistance; by which being moved, as Aristotle also says, they naturally desire to know. These, therefore, are only demonstrative principles, so far as they are used by demonstrations; but they possess a knowledge more manifest than the things which are demonstrated by them. One of these axioms, viz. that it is impossible for the same thing to be and not to be,

affirmed or denied; and, it is impossible for a thing at the same time to be and not to be; and such other propositions as are of a similar nature. Whether, therefore, is there one or a different science of these and of essence? And if there is one, whether or not must we denominate it that science which we now investigate? It is not, therefore, rational to suppose, that there is one science of these*: for, why is it more the province of geometry than of any other science to speculate concerning these? If, therefore, it is in a similar manner the province of any science whatever, but it cannot be the province of all the sciences, as neither is it the peculiarity of the rest, so neither does it belong to that science which knows the essences of things, to know the principles of demonstration. And, at the same time, how will it be the science of these†? For we now also know what each of these is. Other arts, therefore, use

be, is deservedly placed by Aristotle at the summit of science; but with respect to that other no less important axiom, that every thing must be either affirmatively or negatively signified, it must be observed, that in beings and things comprehensible by science, it is necessary that every thing should be affirmed or denied: but if there be a superessential nature, as the principle of things is shown to be by the Pathagoreans, and by Plato in the *Parmenides* and *Republic*; and if (as is the case) it has neither a name nor science, but is ineffable; why is it necessary that this should receive either affirmation or negation, about which all discourse is false?

But since Aristotle says, "and whatever other propositions there may be of this kind," we may add the axiom which asserts, that *every thing desirable is good*; also, that *neither nature, nor, by a much stronger reason, divinity, does any thing in vain*; that *no substance is produced from non-entity, nor resolved into non-entity*; and besides these, the axioms of geometry, arithmetic, and the other sciences, all which are alone considered by him who has a knowledge of causes.

* Aristotle now apparently endeavours to prove, that the same science does not know essences and axioms; but that his endeavours here are not real, but pretended, will be evident, from examining his reasoning.

Wisdom, indeed, which proximately receives demonstrative principles from intellect, speculates them from on high, in a manner superior to the discursive energy of demonstration, and considers their truth, order, and progression from intellect. But it must here be observed, that though axioms rank among things first with respect to demonstration, they are not simply first according to nature; for the first philosopher who speculates and knows being itself, will demonstrate their truth, though they are indemonstrable by the particular science by which they are employed. How then can the first philosopher be said to consider axioms in the same light as those who are skilled in other sciences? or how, if this be not admitted, will the paradoxism ever take place, to which the conclusion tends?

† Aristotle, in his reasoning in this place, is evidently not serious; for he infers, that, if the principles of demonstration are knowable, they are also demonstrable; and that, if demonstrable, they have one subject, as numbers, which, being the objects of demonstration, have one subject,

use these as things known to them. But if there is a demonstrative science respecting them, it will be requisite there should be some subject genus, and that some of them should be participated properties, and others axioms. For it is impossible that there can be demonstration of all things; since it is necessary that demonstration should consist from certain things, be employed about a certain thing, and be of certain things. Hence it happens, that there is one particular genus of all things that are demonstrated; for all demonstrative sciences use axioms.

But if the science of essence is different from the science respecting these, which of them is the more principal, and naturally prior *? for, universally, and in the most eminent degree, axioms are the principles of all things. But, if it is not the province of a philosopher, to whom does it belong, to contemplate the truth and falsehood about these? And, in short, whether is

subject, of which the odd and the even are passions, together with the numbers formed by the conjunction and multiplication of these. But it is false, that axioms, if knowable, are also demonstrable; and it is likewise false, that, if demonstrable, they have a subject: for things themselves are said to be demonstrable in one way, and definitions and propositions in another. But if axioms have a subject, participated properties also and axioms will be apparent about them: hence there will be axioms of axioms. This absurdity is not noticed by Aristotle, but is entirely consequent to what he says. It also follows, that axioms, if they depend on other axioms, are not axioms; for, in this case, we should not be hindered from an infinite progression; axioms being indigent of axioms to infinity. However, though axioms are not properly demonstrable, yet they are knowable by the first science, which is conversant with immediate propositions, and which, together with the *ori*, or *that a thing is*, comprehends also the *diori*, or *why it is*, as proximately proceeding from intellect, which it evolves, divides, and pervades. Nor, if axioms were demonstrable, does it follow, that they would have one subject, since they have an orderly subsistence, and an intellectual elevation.

* If the same person does not know the principles of things and of demonstrations, but this is the province of different persons, each of them will be imperfect; the one not knowing how to demonstrate, and the other embracing empty syllogisms, as being ignorant of the nature of things. Great indeed is the dignity of that science which considers the most comprehensive demonstrative principles of all things; and what else but a wise man can the possessor of this science be called? This master science was denominated by Plato *dialectic*, and by Aristotle *the first philosophy*.

I only add, that this first philosophy, which is conversant with being so far as being, imitates intellect, in which intellection is not separated from intelligible. It is assimilated indeed to intellection by a knowledge of axioms, but to intelligible through the speculation of being itself. But, if it were deficient in either, it would be an imitation of intellect, either possessing intellection without the intelligible, or intelligible without intellect; which is the same thing as to imitate intellect destitute of intellect.

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there one science of all essences, or many sciences *? If, therefore, there is not one science †, what kind of essence must we establish as the object of this wisdom? But it is not rational to suppose, that there is one science of all essences; for there will also be one demonstrative science of all essential accidents ‡; since every demonstrative science speculates, from common opinions, essential accidents about a certain subject. It is the business, therefore, of the same science, to speculate, from the same opinions, essential accidents about the same genus: for the consideration of the *oti*, or, *that a thing is*, is the province of one science; and it is likewise the employment of one science to speculate the particulars from which a thing consists, whether it is the same or a different science; so that the like will take place with respect to accidents, whether these sciences contemplate them, or one of these. Further still, whether the speculation is alone respecting essences, or also respecting things accidental to these. But my meaning is: if, for instance, a solid is a certain essence, and lines and planes, whether it is the province of the same or of another science to know these, and things accidental about each genus; for, if it is the province of the same science, it will be a certain demonstrative science, and the science of essence. But demonstration does not appear to be employed about the formal cause: but if it is the province of another science, what science will that be which speculates the accidents about essence? for, to assign this is very difficult.

* Aristotle here inquires, if there will be one science about every essence, both intelligible and sensible; and, if there is any middle nature, or more than one, between these, whether sciences also will be multiplied according to the diversities of essences. In answer to this inquiry, it may be most truly said, that there is one science which is supreme, and many proximate sciences; that there is one, indeed, which considers being so far as being, and many among which the parts of being are distributed, and which are conversant with these parts in a different manner from the master science, and do not consider them so far as beings.

† One science, indeed, especially speculates all beings. But if different sciences are conversant with different orders of being, it is by no means obscure, that the science which is employed about first and intelligible essences is the first of sciences. Whence, though it considers every being so far as being, it desires to energize principally about the intelligible.

‡ Why is this absurd? For, if there are many demonstrative sciences, as geometry, astronomy, arithmetic, and many others; yet, prior to all these, there is one which considers that which is essentially accidental to being, so far as being. This Aristotle himself more clearly asserts in the fourth book of this work: for arithmetic demonstrates things essentially inherent in numbers; and geometry things essentially inherent in figures. But one demonstrative science, *i. e.* the first philosophy, demonstrates things essentially inherent in every being, not so far as it possesses quality or quantity, but so far as it is being.

Further

Further still: whether must we say, that there are alone sensible essences, or others besides these? And whether is there one genus, or many genera of essences, according to the opinion of those who say that there are forms and natures subsisting between forms and things sensible, about which, according to them, the mathematical sciences are conversant? In what manner, therefore, we assert that forms are causes and essences subsisting by themselves, has been related by us in our first discourses respecting them*: but as the consideration of them is attended with abundant difficulty†, it is no less absurd to say, that there are certain natures besides those which are in the heavens, and that these are the same with sensibles, except that the former are eternal, but the latter corruptible. For they say, that there are man itself, and horse itself, and health itself; but they do not assert any thing else respecting these: and in this respect they act similar to those who acknowledge indeed that there are gods, but that they possess a human form; for, neither do the latter of these make any thing else than eternal men, nor do the former make ideas to be at all different from eternal sensible natures.

Again, if any one, besides forms and things sensible, places things between these, it will be attended with many doubts: for it is evident, that in a similar manner there will be lines, and each of the other genera, besides those

* He here refers us to what is asserted in the first book, or greater *a*. Hence, says Syrianus, those are to be derided who consider that book as spurious.

† To this we reply, that those divine men considered ideas, of which they were such strenuous assertors, as differing in all things from sensible forms: for they viewed the former as divine essences, impartible, self-subsistent, as the fabricative causes of mundane natures, and as possessing a perpetual uniformity of subsistence; but the latter, as sustaining every kind of mutation, as perpetually flowing, and conversant with the circulations of time. But that Aristotle is not serious in what he here asserts, is evident from hence: for it is by no means true, that man in this terrestrial region differs only in the privation of eternity from man in the intelligible world, or, in other words, the regions of divine intellect: for mortal is inherent in the definition of terrestrial man; and Aristotle, in this very work, manifestly demonstrates, that things in which the mortal and corruptible are inherent, possess these, not from accident, but essentially; so that man, being essentially mortal, is incapable of becoming the same with man in the intelligible world, by the accession of eternity.

Syrianus here justly observes, that it is wonderful how readily Alexander approves this assertion of Aristotle, without perceiving that what the philosopher advances is erroneous. He adds, that he cannot think that men who were so well skilled in the art of reasoning, seriously opposed the doctrine of ideas: because, says he, they do not injure the divine dogmas of Plato, as neither do the arrows discharged by the Thracians reach the ethereal gods.

that are sensible* : so that, since astronomy is one of these, there will also be another heaven besides the sensible heaven, another sun and moon, and, in a similar manner, the other natures which the heavens contain. Though, how is it possible to believe that there are such things as these † ? For, neither is it rational to suppose, that this ideal heaven is immoveable, and it is entirely impossible that it should be moveable. A similar consequence will ensue respecting those objects about which the optic ‡ science is employed, and likewise

* And where is the absurdity that these should be intelligible, dianoëtic, and sensible ? Is it not indeed necessary, that there should be in the artificer of the universe a fabricative cause of the heavens and the sun ? and that in the divine souls of the stars there should be a truer heaven and a truer sun than the apparent ? or, in other words, that in these they should subsist without dimension in immaterial perfection ? And are not the sensible heaven and sun the receptacles of these ? What also, is it to be supposed, can be the meaning of Plato, when in the *Theætetus* he speaks of the Coryphæan philosopher astronomizing above the heavens ? and again, when, in the *Phædrus*, he says that there are many blessed visions and progressions within the heavens, which are objects of admiration to the genus of the blessed gods ? for it is evident, that he cannot here mean the corporeal heavens ; since body, however exalted, can never be the object of felicitous contemplation to a divine nature. There are, therefore, stars above the heavens, or rather intelligible lives of the stars, whose unconfused union, never-failing communication, and conjunction with intelligible essences, it is the business of Aristotle's wise man to contemplate. There is also an intelligible heaven besides this, which is the object of sense, the vision of whose divinely-splendid spectacles gives beatitude to mundane divine natures ; so that it is very properly said, that, besides intelligible and sensible lines, there are certain lines which have a middle subsistence, that is, which subsist in soul according to a dianoëtic characteristic. There are also other heavens and other suns, intelligible, intellectual, and dianoëtic : for, as the divine Plato says, the artificer of the universe, placing intellect in soul, and soul in body, caused the whole mundane animal to become intelligent and animated. Every thing, therefore, which is beheld in the apparent heavens sensibly and with dimension, subsists, in immaterial and productive powers, according to the nature of soul ; but, in forms in the highest degree impartible and intelligible, according to intellect.

† Aristotle admits, that there must be an immoveable cause of things which are moved, but is adverse to its being denominated after the same manner with its effects. But it is necessary, as Syrianus justly observes, to advert to the method adopted by theologists, among whom the progressions are celebrated of many heavens, many suns, and many other particulars ; at the same time carefully remembering, that these heavens and suns have an incorporeal subsistence, and, that their progressions signify their becoming ineffably unfolded into light, from the ineffable principle of things.

But neither is it altogether impossible, that there should be a moveable cause of things which are moved, unless we confine the term motion to corporeal natures. But who will not admit, that true beings possess a fabricative and intellectual motion ?

‡ That Aristotle is not serious in what he here asserts must be granted, unless we are willing to

wise with respect to harmonics in mathematics: for it is impossible that these should have a subsistence different from sensibles, through the same causes; for, if there are sensibles and senses which have a middle subsistence, it is evident that there will also be animals subsisting between them and things corruptible. But it may also be doubted, about what kind of beings it is requisite to investigate these sciences*. For, if *geodæsia* † differs in this only from geometry,

to believe that he adopts consequences absurd, and indeed impossible. For, as he admits that we have another eye besides that of sense, it must have a power perceptive of those species which are the proper objects of its vision. For, if the universals which are beheld by the intellectual eye are merely things abstracted from sensible objects, and therefore of an origin posterior to sensibles themselves, things which have no real subsistence will be the spectacles of intellect. Will not, therefore, that most excellent part of us, intellect, be more unhappy than the sensible eye, since this is co-ordinated to beings; or, in other words, contemplates objects which have the same reality of subsistence with itself; while, on the contrary, intellect will be the spectator of delusion and non-entity? But if this is absurd, and we have an intellectual eye endued with a vivive power, there must be forms conjoined with this power, immoveable indeed according to corporeal motion, but moved with intellectual energy. May we not also ask, if there is no spectator of those harmonic reasons which divinity inserted in soul prior to the apparent order of things? According to Homer, all the mundane gods partake of the muses, and of the harmony proceeding from them:

————— of the muses full
With beauteous voice alternately who sing.

There must, therefore, be another harmony besides that which is sensible. Since too, according to Aristotle, there is one co-ordination of intelligible species to the first good (see the end of the twelfth book), must there not in such an arrangement be the most beautiful and divine harmony? The first philosopher, contemplating this harmony, is conversant with a melody ineffably more admirable than that which is produced by sensible music.

* It is indeed truly dubious, what sciences are the greatest exemplars of sensibles. Yet we may reply in answer to the doubt, that those sciences which are employed about the immaterial exemplars of sensibles, are more immaterial than those which are conversant with natural species, or reasons, or natural numbers.

† But *geodæsia* does not alone differ in this from geometry. But the difference consists in this, that the former regards the indigence of human nature, and the advantage of mortal life, and is busied with manual operation, without paying any attention to the speculation of real being; but the latter separates the soul from sensibles, purifies its intellectual eye, and brings it by a circular progression as it were to intellectual vision, removing it from the more gross and figured composition of material natures. What then follows from this? That there must be another medicinal art, besides that which is divine and that which is conversant with mortal bodies. For, let there be a divine cause of this art, or, in other words, an idea in the intellect of divinity, called by the ancients *Esculapius*, which cause or idea imparts to the first beings an eternally

geometry, that the former of these is conversant with things which we perceive, but the latter with things which are not sensible; it is evident, that, besides the medicinal science, there will be a certain science between medicine itself, and the medicine which subsists among us. But how is this possible? for there will also be certain salubrious things, besides such as are sensible, and the salubrious itself. And, at the same time, neither is this true, that geodæsia * is conversant with sensible and corruptible magnitudes: for, these being corrupted, it also will be corrupted. But neither will astronomy be conversant with sensible magnitudes †, nor with this visible heaven. For
neither

eternally according measure, but to middle and last natures communicates this measure when they are capable of receiving it; let there be also a mortal physician who takes care of mortal bodies;—must not, therefore, things which are so distant from each other be joined together by some common boundaries? And is it not necessary to consider this art as having a middle subsistence in the dæmoniacal and heroic orders, and in souls liberated from a mortal life? And why may not philosophy, which purifies from the passions, be placed as a medium between divine justice, which is the medicine of all mundane depravity, and human medicine, which is alone employed in taking care of generated and corruptible bodies? We may therefore say, that those arts which contribute to the indigence of the mortal life proceed from the prolific power of soul, on account of its subsistence between intellect and a corporeal nature. These arts, however, must be considered as having an analogous subsistence in divine natures, and hence antient theologists ascribe the fabrication of arms to the Cyclops and Vulcan, and the art of weaving to Minerva and Proserpine.

* What necessity is there, that the arts of things corruptible should be corrupted with the corruptible things themselves? For, this is just as if it should be said that the definitions of things corruptible are corrupted with the perishable natures. But, as the species are preserved, though the individuals are mortal, it is necessary that definition also should be preserved.

† The astronomer considers the sensible heavens, but he does this as possessing certain universal reasons which are the images of those forms by which the heavens were fabricated; and, in consequence of conjoining these immaterial and universal reasons with the phænomena, he exhibits things essentially inherent in the celestial orbs. But observe, that the heavens themselves, though full of life and a divine power, yet, on account of their bulk, and possessing dimensions, receive incorporeal natures partially and attended with interval. For, since we contain one dianoëtic principle, which bisects all greatest circles in a sphere, and is the image of that productive principle which causes the universe to subsist in conjunction with its artificer, yet the nature of body does not permit the heavens to receive collectively and in one all the power of this principle. But it is by no means wonderful that it should be received by the heavens separately, and not collectively, nor so accurately as that which is imparted by the maker, and as that may be considered which proximately proceeds from the Father of the universe; for that which imparts is perfectly incorporeal, and that which receives is body; and whatever is received is received according to the nature of the recipient.

But in answer to Protagoras, and all those who vilify geometry, it may suffice at present to observe,

neither are sensible lines such as the geometrician speaks of, since nothing of sensibles is accurately straight or round: for a circle touches a rule not in a point, but as Protagoras said, confusing geometricians: nor are the motions and spiral revolutions of the heavens similar to those about which astrology discourses; nor have points the same nature as the stars.

But some assert *, that there are such things as are said to subsist between forms and sensibles, which yet are not separate from sensibles, but in them. To enumerate to these men the impossibilities which attend this doctrine, would require a long discourse: it is sufficient, therefore, to have speculated thus much respecting them: for neither is it rational that this should alone be the case with these, but it is evident that it would also happen that species would subsist in sensibles; since both these are the consequences of the same reasoning process. Further still: it would be necessary that two solids should be in the same place; and mathematical entities would not be immoveable,

observe, that if the objects of geometrical speculation surpass in immateriality, purity, certainty, and truth, objects of sense (and that they do so the accuracy of the definitions and conclusions of geometry sufficiently evinces), it is evident that geometry is conversant with a venerable and illustrious order of things, an order prior indeed to sensibles, but posterior to intellectual paradigms: for such is the dianoëtic series.

* Those who assert, indeed, that there is a certain middle nature between intelligible and sensible species, and that this middle nature is contained in last and material forms, must undoubtedly be allowed to err. But, since universal may be considered multifariously, as, for instance, man may be considered as subsisting in the nature of the universe, in our souls, and in any individual, as Plato; when the universal is of such a nature as to be common to many things, then it hastens to matter, cannot abide in itself, and becomes the receptacle of peculiar qualities, in conjunction with which it subsists.

But Aristotle asks, How can two solids be in the same place? To which we reply, that the advocates for ideas did not affirm, that the universal which is co-ordinated with a solid is itself a solid; but that it also itself contributes to the one substance of a solid body. Every individual, indeed, of the human species contains man universal united with man particular; and yet there are not in him two animals, or two men, or two solids, but these converge to one subsistence.

Mathematical entities also, says Aristotle, would not be immoveable in consequence of subsisting in things moveable. But may we not say, that they will remain unchanged as long as the things which contain them subsist? For, neither are those things which are properly common moved, while their recipients subsist. And, lastly, he asks what necessity there is of introducing these, and placing them in sensibles. To which we must say, that it is necessary, since sensibles are imitations and images of intelligibles, that they also should possess certain things which are more comprehensive and common, prior to such as are more special and particular.

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in consequence of subsisting in things sensible which are moved. And, in short, on what account can any one admit them to have a subsistence, and a subsistence in sensibles? for there will be a certain heaven besides heaven, except that it will not be separate, but in the same place; which is more impossible.

CHAP. III.

RESPECTING these things, therefore, there is great doubt*, viz. how they may be admitted so that we may obtain the truth; and likewise respecting principles, whether it is requisite to consider genera as elements and principles, or rather those things from which being inherent every thing first consists: as, for instance, the elements and principles of voice appear to be those things from which all voices are first composed, and not voice in common: and we say, that those things are the elements of diagrams, the demonstrations of which are inherent in the demonstrations either of all or the greater part of other things. Further still: both those who assert that there is one element, and those who say that there are many, from which bodies are composed, and from which they consist, assert, that they are principles; as, for instance, Empedocles says, that fire and water, and the natures which subsist together with them, are elements, from which being inherent things exist; but he does not speak of these as the genera of beings. Besides this too, if any one is willing to consider the nature of other things, as, for instance, a bed, from what parts it consists, and how those parts are composed, he will then know the nature of it. From these reasons, therefore, principles will not be the genera of beings. But if we know every thing through definitions†, but principles

* The doubt, says Syrianus, whose province it is to consider scientifically concerning like and unlike, contrary and different, as it is the province of one skilled in dialectic to consider these according to probability, was in the order of the Problems the sixth. But now, says he, Aristotle omits this, perhaps because in the following book (the fourth) he was manifestly to enunciate these as belonging to the first philosopher; for this consideration does not require much doubting, but rather enunciation and a brief reply; or because he delivers the most perfect doctrine concerning these in the tenth book. Hence, that which he had at first ranked as the seventh in order, he now assumes as the sixth.

† That we know every thing by definitions, is in a certain respect true: but how are principles the genera of definitions? No otherwise perhaps than as inherent in definitions. But if we admit, that definitions and species are alone derived from things of posterior origin, i. e. from universals

principles are the genera of definitions, it is necessary also that genera should be the principles of things defined. And likewise, if to possess the science of beings * is to possess the science of forms, according to which beings are predicated, in this case genera will be the principles of forms.

But some also of those who assert that *the one*, or *being*, or *the great* and *the small*, are the elements of beings, use these as genera. However, it is not possible to call both these principles †: for there is one reason of essence; but the definition which is assigned through genera, will be different from this, and likewise that which assumes those particulars from which being inherent a thing consists: to which we may add ‡, if genera are in the most eminent degree principles, whether is it requisite to think, that the first of genera are the principles of things, or the last genera which are predicated of individuals? for this is doubtful. For, if things universal are in a more eminent degree principles, it is evident that the highest genera will be the principles of things (for these are predicated of all things); and hence there will be as many principles of beings as there are first genera: so that both *being* and *the one* will be principles and essences; for these are especially predicated of all beings. But it is not possible that there can be only one genus of beings,

universals abstracted out of sensibles, how can we call these the principles of species, or definitions? But, if we direct our mental eye to an order of things prior to sensibles, perhaps we may by this mean ascend to more true principles.

* Those who say that *the one*, or *being*, or *the indefinite duad*, are the principles of things, and the sources of perfection to beings, assert, that from *the one* good proceeds to all things, from *being* essence, from *the indefinite duad* powers and energies, motions and progressions, and all various augmentations; and that there is no being which does not participate of these three, and is not generated from them. There can be no impropriety, therefore, in calling these principles the genera of all things. But, assigning the causes on account of which things inherent are more principles than genera, he employs the testimony of Empedocles; and, adducing the Pythagoreans and Plato as coadjutors of this opinion, he now says, that either genera or principles must predominate. But we have already observed, that, if different principles are differently considered, both may be true.

† Aristotle, in his last Analytics, demonstrates, that there is one most proper definition of the species of every thing; and that this is altogether effected by genera. According to his opinion, therefore, principles should rather be called genera themselves: for, if definition is from genera, but the things from which definition consists are principles, genera also will be principles.

‡ This is the eighth question in the order of the Problems; but now it is considered as the seventh, because the sixth is omitted.

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and that this is either *the one* or *being*: for it is necessary that there should be differences of every genus, and that each should be one. But it is impossible either that species should be predicated of the proper differences of genus, or that genus should subsist without its species; so that, if either *the one* or *being* is genus, no difference will either be *the one* or *being*. But if there are not genera, neither will there be principles; since genera are principles. Further still: things subsisting between these, comprehended together with differences, will be genera as far as to individuals. But now this appears to be the case with some, and not with others; to which it may be added, that differences are in a greater degree principles than genera. But if these also are principles, there will be, as I may say, infinite principles, and especially if any one establishes the first genus as a principle. But if *the one* is of a more primary nature *, and *the one* is indivisible, but every thing indivisible is either so according to quantity, or according to species, and that which is according to species has a prior subsistence, but genera are more divisible into species, *the one* indeed will be predicated the last of all; for man is not the genus of particular men.

Further still: in those things in which there is prior and posterior †, it is not

* The reasoning of Aristotle in this place is as follows: Indivisible species, so far as indivisible, and more one than genus, signifies principle more than genus; for this is divisible, and not more one than many. For, since division takes place according to two modes, and since the prior is that which subsists according to species (for this belongs to incorporeal essences, and the ten predicaments, but the other to quantities only);—in both these ways, that which is divided is less one than that which divides: but this is especially the case with things which are divided according to species; for they produce many wholes. Genera, therefore, divided into species contain species in themselves; but the most special species is not divided into particulars, but as species composes individuals. The most special species, therefore, is more one than genus; and that which is more one is a principle. Hence the most special species is more a principle. But the reasoning is evidently false, so far as pertains to the minor proposition; for that which is proximate to infinities cannot be more one than that which is established more remote from them. But neither is genus so divided into species as to be lost in the subsistence of these; but, remaining true genus, it gives subsistence to species. Genus, therefore, is more comprehensive in power than species, but not more singular in number. But this is a property which truly accords with principles.

† Since the differences according to which we distinguish the powers of species are not equally excellent with respect to the subsistence of genera, and for the most part have, among themselves, the order of form and privation, it is altogether necessary that species should differ from each other according to better and worse, prior and posterior. Indeed, according to the Pythagoreans,

not possible that the thing which is predicated of these should be different from them. Thus, for instance, if the duad is the first of numbers, there will not be any number besides the species of numbers: and, in a similar manner, neither will there be figures besides the species of figures. But, if this is the case with respect to these, scarcely will there be genera of other things besides species: for genera appear especially to be of these. But, in individuals, one thing is not prior and another posterior. Further still: wherever one thing is better and another worse, that which is better is always prior; so that nothing of these will be genus. Hence, those things which are predicated of individuals appear to be principles more than genera. Again, it is not easy to say in what manner it is requisite to consider these as principles. For it is necessary that a principle and cause should exist exclusive of the things of which it is the principle, and that it should be able to subsist separate from them. But why should any one think, that any thing of this kind exists besides that which is particular, except that it is predicated universally and of all things? But if on this account, then things more universal must be considered as principles in a more eminent degree: so that first genera will be principles.

C H A P. IV.

BUT there is a doubt * consequent to these things, which is the most difficult and the most necessary of all things to contemplate, and which is the subject

Pythagoreans, the odd number is more excellent than the even, and the circle than right-lined figures; and still further, the body which has naturally a circular than that which has a rectilinear motion. Yet it does not follow from hence, that these species are not placed under one genus. For, though differences are not in genus, but externally accede to species, yet species may derive from genus *the same* and *the similar*, and, from differences, *prior* and *posterior*, *better* and *worse*. Or, if we say that genus contains in itself all the differences of species, in this case it places indeed about itself many species, some being more allied to its own nature, some having a middle order among things which proceed from it, and some appearing at the extremity of those orders which it generates; yet it confers on all an image, character, and interior representation, through which they may be referred to the one and most general principle from which they derive their being. But, according to this one interior representation, they are also not prevented from being univocal; though from other causes they possess among themselves a great variety and characteristic difference.

* Aristotle here inquires, whether, besides sensibles, there are such things as universals. For, if there are not, says he, science will depart from beings, since it will not be possible for us to

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obtain.

subject of the present discourse. For, if there is not any thing besides particulars, but particulars are infinite, how is it possible to possess the science of infinities? For, so far as there is a certain one and the same, and so far as there is something universal, so far we know all things. But if this is necessary, and if it is requisite there should be something besides particulars, it will also be necessary that there should either be last or first genera besides particulars. That this, however, is impossible, we have just now doubted.

Further still: if there is especially something besides the whole, when any thing is predicated of matter, whether, if there is a certain form, is it necessary there should be something (universal) besides all individuals? or, that there should be something universal besides some and not besides others? or, is there no universal besides individuals? If, therefore, there is nothing besides particulars, there will be nothing intelligible, but all things will be sensibles, and there will not be science of any thing, unless some one asserts that sense is science. Again, neither will there be any thing eternal, nor any thing immovable*; for all sensible things are corrupted, and are in motion. But if there is nothing eternal, neither is it possible there can be generation. For it is necessary that there should be something which is generated, and something from which it is generated, and that the last of these should be that which is

obtain a knowledge of things which are infinitely generated in an infinite time: for we now think that we comprehend these through universals. But, if universals have no subsistence (*αυτοουσία*), the whole of the first philosophy, which consists from the divisive, demonstrative, and definitive method, will be vain, and nothing more than a delusive dream; but, if there are universals, there will again be genera and species. To which we may add, that neither could the infinite multitude of individuals exist without the subsistence of one cause of infinite power; unless we suppose them to exist from chance. But, how can things be casual which have a natural subsistence? If this, therefore, be the case, and an infinite number of men, horses, and many univocals, are generated in an infinite time, there must be a unity of infinite power, presiding over each of these species, according to which the individuals of these species are infinitely generated in the universe in a definite manner. Further still: all animals in generation, or the sublunary region, are changed from that which is in capacity, or seed, into that which is in energy. But, if this be the case, it is requisite that there should be animal in energy in the universe, which may lead into energy animals in capacity. After this manner, with respect to man and every other animal, we must consider true genera as endued with a generative power according to nature, and true species as giving form to the infinity of particulars.

* By taking away intelligibles and the objects of the dianoëtic energy, not only intellect, intelligible, and science are taken away, but likewise every thing eternal. Aristotle indeed proves in his Physics, that every body is finite; and now also manifestly shows us, that, unless there is something naturally eternal, generation could not subsist.

unbegotten,

unbegotten, if the progression of things stops, and it is impossible that any thing can be generated from non-entity.

Further still: there being such things as generation and motion *, it is necessary also there should be a boundary or end: for neither is any motion infinite, but of every motion there is an end; and it is not possible a thing should be generated which cannot possibly be generated. But that which is made necessarily *is* as soon as it is made. Again, if matter is, on account of its being unbegotten, it is much more rational that there should be essence, on which the being of matter depends: for, if neither essence is, nor matter, nothing whatever will have any subsistence. But, if this is impossible, it is necessary that form and species should be something besides the whole. But again, if any one admits this, it is doubtful † in what things he should

* It is necessary that there should be an end of every generation. For the motion of nature is not a blind impulse without design, nor is the generation which is perfected by it destitute of an end. But if every generation has an end, but every ultimate end has also a beginning, (for this must be understood,) there is a beginning and an end of all generation and motion. But that every thing which is generated has an end, since it also has a beginning, is manifest, and is thus proved by Aristotle. That which is capable of being generated *is* generated, and consequently arrives at the end of generation. Every generation, therefore, and motion, ranks among things of which there is a beginning and an end. But of that which is eternal there is neither beginning nor end. There is therefore no motion nor generation of an eternal nature. If then there is any thing eternal, it is requisite that it should be ingenerable and self-motive. Hence it must either be intelligible, or the object of dianoëtic energy. For these are without generation, and immoveable. There are, therefore, intelligible and dianoëtic objects. But this is what he proposed to show from the first. By collecting, therefore, all that has been said, it follows, that if generation is, (and it is necessary it should be,) there is something eternal. If there is something eternal, there is something ingenerable and immoveable. If this be the case, there is something intelligible. And, if this be admitted, sensibles are not the only things which have a subsistence.

† That which Aristotle here inquires, viz. of what things there are ideas, and of what there are not, the reader will find accurately discussed by Plotinus in his book on *Intellect, Ideas, and Being*; and particularly by Proclus, in his MS. Commentary on the *Parmenides* of Plato. At present, it may suffice to say, that there are no ideas (viz. incorporeal producing causes) of things artificial; and therefore Aristotle now very properly denies the existence of house separate from the multitude of houses: nor are there ideas of things contrary to nature, nor of things evil, nor of things base, nor of particulars. But we say that there are eternal, intellectual, generative, and providential exemplars of the wholes in the sublunary region and in the heavens, and of the immaterial reasons of the soul. For an account of these wholes, which Aristotle in his *Meteors* calls *collective bodies*, and which in the sublunary region are the sphere of earth, the sphere of water, the sphere of air, and the sphere of fire, and, in the heavens, the starry spheres, see my Introduction to the *Timæus* of Plato.

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admit

admit it, and in what not. For it is evident that it cannot be admitted in all things; since we do not admit that there is any house different from sensible houses. To which we may add, whether will there be one essence* of all things, as for instance, of men? But this is absurd. For all things are not one of which the essence is one, but many and different. But this also is irrational. At the same time, too, how does matter receive each of these †? and how is the whole (viz. sensible particulars) both these?

Further

* This also may be doubted against those who introduce ideas, whether there is one idea of all men; which idea they call *man itself*. But this, says Aristotle, is absurd. For it would be requisite that all men in this terrestrial region should be one, as subsisting with relation to one. For all things are one, of which the essence is one. But it will be proper to ask, What essence is here alluded to? Whether that which is according to inseparable, or that which is according to separable form? If that which is according to inseparable form, the objection made by Aristotle is indeed true. But if that which is according to separable form, we may say that there is no absurdity in admitting that many and infinite particulars are generated from one cause; and that, nevertheless, they are of the same species among themselves, if they are produced according to that cause. And, with respect to inseparable cause, we may say that it is one in species, but many and infinite in number. But to suppose that there are many separable and different causes, is partly irrational and partly necessary. For, in the intellect of the Artificer of the universe, one exemplar of men is sufficient; and it is absurd to suppose many, since one is sufficient for the purpose of producing of all men. For, in what would these exemplars differ from each other, since they would subsist in the same indivisible nature? It is also necessary that in the soul of the universe there should be a cause of men that are here, and likewise in the nature of the mundane wholes; and, in short, that there should be ideas according to every order of beings.

† The manner in which the sensible receives its subsistence from the intelligible world; or, in other words, how the forms which are merged in matter subsist; whether, with reference to ideas, they are like pictures, or images in a mirror, or impressions in wax, is a subject involved in much obscurity, and demands the most profound investigation. For Plato sometimes calls material forms icons, or resemblances, and assimilates them to pictures; but at other times he assimilates them to impressions in wax, and at others again to images in water or mirrors.

For the sake of the liberal reader, therefore, the following observations on this interesting subject, derived from the very adytum of Platonic philosophy, are subjoined.

The participations of intellectual forms are assimilated to the representations in a mirror; for, as, in these, *habitude* and *position* cause the image of the person to be seen in the mirror; so, the *aptitude* of matter extending itself as it were to the Artificer of the universe, and to the inexhaustible abundance which he contains, is filled from him with forms. The participations are also assimilated to the impressions in wax. For ideas impart a certain vestige and impression of themselves; and neither is this impression the same with the seal by which it was produced, as neither is the form merged in matter the same with the immaterial and divine form from which it originated. But this latter mode differs from the former so far as it indicates a cer-
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Further still: this also may be doubted respecting principles. For, if they are one in species, there will be nothing which is one in number, nor will there

tain passive property in the recipient; for the mirror does not exhibit passivity sensibly, as the wax does in the latter instance. Hence some of the Platonic philosophers, considering matter as impassive in the participation of forms, assimilate it to a mirror, but call forms images and representations. Others again, considering matter as passive, say, that it is impressed like the wax by the seal, and call forms the *passions* of matter.

Forms also are said to be like the similitudes of icons, whether effected by the painter's, or the plastic, or any other art. For these forms, being fashioned by a divine artificer, are said to be *similar* to divine forms; and hence the whole sensible order is called the icon of the intelligible. But this assertion differs from the former, so far as this separates the maker from the exemplar; but those produce the analogy from considering both as one. And such are the modes according to which material forms have been said to subsist with relation to such as are divine.

It must, however, be observed, that each of these is imperfect considered by itself, and incapable of representing to our intellectual conceptions the whole truth respecting this participation. For, in the first place, consider as to the mirror, that the countenance beheld in it turns itself towards the mirror, while, on the contrary, an intellectual cause beholds itself, and does not direct its vision to outward objects. If, too, the mirror appears to possess a communication of something, but in reality does not, (for the rays are reflected back to the countenance,) it is evident that this also is foreign from the participation of divine forms; for, as they are perfectly incorporeal, nothing can be separated from them and distributed into matter.

In the second place, if we consider the impressions in wax, we shall find, that both that which impresses externally impresses, and that which is passive to the impression is externally passive; but form pervades through the whole of the subject matter, and operates internally. For nature fashions body inwardly, and not externally like art. And above all, in this instance, that which is participated approximates to that which participates. But it is requisite that divine forms should be exempt from all things, and not be mingled with any thing of a different nature.

In the third place, let us consider the analogy from icons, and we shall find this also deficient. For, in the first place, forms fashion the whole of the subject matter by which they are received, and this by an internal energy: and, in the next place, the exemplar and the maker are here separated from each other. Thus, the figure which is painted does not produce its likeness on the canvas, even though the painter should paint a resemblance of himself; for it is the soul which operates, and not the external figure, which is the exemplar: nor does that which makes, *assimilate* that which is produced to itself; for it is soul which makes, and that which is produced is the resemblance of external form. But divine forms are at the same time paradigmatic and demiurgic of their resemblances: for they have no similitude to the impressions in wax, but possess an efficacious essence, and a power assimilative of things secondary to themselves.

No one of these modes, therefore, is of itself sufficient to represent the true manner in which divine forms are participated. But, perhaps, if we can discover the most proper mode of participation, we shall see how each of these touches on the truth, at the same time that it falls short of the whole characteristic.

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there be *the one itself* and *being itself*. And how will it be possible to know scientifically, if there is not in all things a certain one? But indeed, if they are one in number *, each of the principles also is one in number, and there

It is requisite, therefore, in order to this participation, to consider as the causes by which it is effected, the efficacious power of primary and divine forms, and the desire and aptitude of the natures which thence derive their formation. For neither is the fabricative and efficacious power of forms alone sufficient to produce participation; for they are every where similarly present, but are not similarly participated by all things. Nor is the desire and aptitude of the participants sufficient without the productive energy of forms; for desire and aptitude are of themselves imperfect. The prolific essence, therefore, of the demiurgic intellect exerts an efficacious energy, which the subject nature of sensibles receives. But, in effecting this participation, it neither makes use of impulsions, for it is incorporeal; nor of any indefinite impetus, as we do, for it is impassive; nor of any projectile force, for it is perfect; but it operates by its very essence. Hence that which is generated is an image of its maker, intellection there concurring with essence: so that, according as he intellectually perceives, he fabricates; and, according as he fabricates, intellectually perceives. Hence, too, that which is generated is *always* generated by him; for, in essential productions, that which is generated is every where consubstantial with its maker. In consequence of this, in things subsisting according to time, form, in *the sudden*, supervenes its subject matter, whatever has been effected previous to its presence, alone removing the impediments to its reception. For, *the sudden* imitates according to *the now*, the at-once-collected and eternal generation of all things through the aptitude of the recipient.

If, again, we desire to see what it is which connects demiurgic power with the aptitude of recipients, we shall find it is goodness itself, this being the cause of all possible union. For, participations proceed to mundane causes through a desire of good; and demiurgic forms, through goodness, make their progressions into secondary natures, imitating the inexhaustible and exuberant fountain of all good, which, through its own transcendent goodness, gives subsistence to all the divine orders, if it be lawful so to speak. We have therefore these three causes of the participation of forms, the one goodness of the Father of all things; the demiurgic power of forms, and the aptitude of the natures which receive the illuminations of forms. But, participation subsisting according to these causes, we may perceive how it is possible to assimilate it to representations in a mirror, and to *reflection*. For aptitude and desire, which are imparted to sensible natures from on high, become the causes of their being again *converted* to the sources whence they were derived. This participation, too, may, after another manner, be assimilated to a *seal*. For the efficacious power of divine causes imparts a *vestige* of ideas to sensibles, and apparent impressions from unapparent forms. For we have said that the demiurgic cause unites both these together. But he who produces an icon effects something of this kind. For in a certain respect he congregates the subject and the paradigm; since, when this is accomplished, he produces an impression similar to the exemplar. So that these modes, in a certain respect, touch upon the truth. But it is by no means wonderful if each is found to be deficient. For the recipients of ideas are partible and sensible; and the characteristic peculiarity of these unapparent and divine causes cannot be circumscribed by the nothingness of corporeal natures.

* We have before shown how intelligibles are bounded both in species and number. Let it, however, be carefully remembered, that things emanating from principles, when they become mingled with matter, are no longer such as the principles themselves.

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are not different principles of different things as in sensibles; as, for instance, of this syllable, which is the same in species, the principles also are the same in species; for these also are different in number. But if this is not the case, and the principles of beings are one in number, there will not be any thing besides the elements. For, to call a thing one in number, or to call it a sensible particular, differs in no respect: for, thus we call a sensible particular one in number; but universal, that which is common in these. Just, therefore, as if the elements of speech were bounded in number, it would be necessary that all the letters should be as many as the elements, since neither two nor more than two of them would be the same.

But a doubt in no respect less than this is omitted, both by those of the present day and the ancients, viz. whether there are the same or different principles of things corruptible and of things incorruptible. For, if there are the same principles, after what manner are some things incorruptible, but others corruptible? and what is the cause of this? Hesiod*, indeed, and all such theologists alone paid attention to that which appeared probable to themselves,

* In defence of Hesiod and the ancient theologists, it may be said, What other principles could they introduce than divine natures? For neither is any thing more ancient than a principle, nor than divinity, or divine natures. The ancient theologists, therefore, necessarily said, that all things were generated from the gods, viz. intellect, soul, the natures of bodies, and things eternal and corruptible. Because, therefore, some things which proceed from divine natures are immediately united to those natures, being rooted as it were and centred in them; but some are never naturally adapted to be immediately conjoined with them; and others again sometimes apostatise, and sometimes are united with them, to which class of beings we belong;—hence, those beings which are immediately or mediately perpetually united with divine natures are said to be thence fed with ambrosia and nectar; ambrosia affording them a separation from the realms of generation, in which *mortality* and impurity predominate; but *nectar* preventing them from being allured, through providentially presiding over the extremity of things, and causing them to provide inflexibly and immutably over the mundane wholes. But those which are sometimes elevated to divine natures, but are naturally adapted to apostatise from thence, when they speak the truth, and observe their oath, are said to partake of nectar and ambrosia; that is, when they are extended to true being, and cultivate a divine nature; but when they violate truth, and become perjured; that is, when they decline to non-entity and generation, and treat a divine nature with contempt; then, as becoming mortal and frail, they are deprived of the aliment arising from the vision of an intelligible essence, and never partake of it while they continue in this state of defection and revolt. Can any assertion, therefore, be more true than this?

But if the assertions of the ancient theologists are not obvious to every one, it is by no means wonderful,

selves, but neglected us. For, making principles to be gods*, and asserting that all things originated from the gods, they say that those natures are mortal which have not tasted of nectar and ambrosia. But it is evident that they employ these names as expressive of things known to themselves, though, respecting the enunciation of these names, they speak beyond our conception. For, if the immortals touch these for the sake of pleasure, nectar and ambrosia are in no respect the causes of their being †: but, if they are the causes of their being, how will the gods be eternal, since they require aliment? It is not, however, worth while to speculate seriously ‡ respecting those things which are spoken sophistically in a mythological manner.

But it is requisite to inquire of those who speak from demonstration, why, if things are from the same principles, some are naturally eternal, but others are corrupted. However, as they do not assign the cause of this, and as it is not rational that this should be the case, it is evident that there are neither the same principles nor causes of these. For Empedocles §, who, it might be thought,

wonderful: for perhaps those great men wrote with studied obscurity, on account of the natural inaptitude of the multitude to the comprehension of divine dogmas; and perhaps also en-theistic conceptions, or such as are the progeny of divine fury, are rather adapted to be obscurely signified, than unfolded by the discursive energies of the rational power.

* Aristotle, towards the end of the twelfth book of this work, says, that the antients, in calling first principles gods, spoke *divinely*.

† In answer to this we may reply, that nutriment signifies illumination from supernal causes, and a supply of good. But this imparts still more abundant good to beings which are even-naturally good, and a more perfect eternity to beings essentially eternal; so that from such nutriment they become partakers of being, and of the cause of ineffable delight.

‡ Aristotle says this in consequence of his great unwillingness, which we have noticed in the Introduction, to admit that causes should be called by the same names as their effects.

§ In defence of Empedocles we may say, that, like other Pythagoreans, he knew that there were two kinds of essences, the intelligible and the sensible; that he did not suppose that *strife* was a corruptive, and *friendship* alone a productive principle; and that he was not silent with respect to the cause of their alternate dominion;—but that, being a follower of Orpheus and Pythagoras, he establishes, after the one great principle of all things, (of which neither he, nor Parmenides, nor Pythagoras, ever intended to speak much,) these two principles, *friendship* and *strife*, which the Pythagoreans denominated *monad* and *duad*, and the latter of which they called *indefinite*, on account of its universally pervading power. From these two principles, according to Empedocles, the intelligible and sensible worlds emerged. In the intelligible world, therefore, which in his verses he calls a sphere ||, *friendship* predominates on account of the union of

|| Vide Simplic. in Phys. p. 258 et 265.

immaterial

thought, would especially speak consistently with himself, suffers the very same thing: for he places *strife* as a certain principle and cause of corruption. Yet it would seem that this no less than friendship is generated from *the one*; for all other things are produced from this (viz. strife) except divinity. He says, therefore, "From which all things that were, that are, and that shall hereafter be, originated; from which trees also germinated, men and women, wild beasts and birds, fishes nourished in the water, and the long-lived gods." It is also evident, that all things subsist without these: for, if strife was not inherent in things, all things (as he says) would be one: since, when they come together, then strife stands at the extremity of things. Hence it happens to him, that the most blessed divinity is less wise than other beings: for he does not know all the elements, because he does not possess contention. But knowledge is a conjunction of similar with the similar. For he says, "By earth we behold earth, and by water, water; by æther, divine æther, and by fire, pernicious fire. By friendship we perceive friendship, and by strife, baneful strife."

But, to return whence we digressed: this is evident, that it happens to him that strife is no less the cause of corruption than of being; and, in like manner, that friendship is not more the cause of the being than of the corruption of things; for, collecting them into one, it corrupts other things. And, at the same time, he does not mention any cause of the transmutation, but that it is naturally adapted to subsist in this manner. "For, (says he) when mighty* contention was nourished in the members, it ascended to the honours of perfect time†, which being vicissitudinary to them preceded the
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immaterial and divine essences; but in the sensible world *strife*. And it is owing to the perfection proceeding to these principles from that cause which is exempt from both, and which is no other than the ineffable principle of things, that, though both are every where, yet one rules over the intelligible, and the other over the sensible world.

* Empedocles calls it *mighty*, in the same manner as Orpheus in the following line, which is only to be found in Syrianus, viz.

Χασμα και μεγα χασμα πανωριον ενθα και ενθα.

i. e. "A chasm and a mighty chasm every way immense."

With Pythagoras it is the indefinite duad. Empedocles also assigns members to it and augmentation, because it is the source of progression, generation, multitude, multiplication, and all augmentation, to the universe.

† Empedocles here, in conformity with Orpheus, symbolically calls the first principle of
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ample oath." As if it were necessary, indeed, that a change should take place. But at the same time he evinces no cause from necessity, asserting only thus much conformably to his own doctrine, that he does not make some things corruptible and others incorruptible, but makes every thing corruptible except the elements. But the doubt which is now mentioned is this: why, if all things are from the same principles, have some things a subsistence, and others not? Thus much, however, may suffice to show that they are not from the same principles. But, if the principles of things are different, one doubt is, whether they also will be incorruptible or corruptible. For, if they are corruptible, it is evident that they also must necessarily originate from certain other things: for all things are corrupted into those things from which they derive their being: so that, on this hypothesis, it happens that there are other principles prior to principles. But this is impossible, whether the progression stops, or advances to infinity. Further still: if principles are taken away, how will things corruptible subsist? But, if principles are incorruptible*, why, from these being incorruptible, do things corruptible subsist, but from others things incorruptible? For this is not rational; but is either impossible, or requires a multitude of arguments.

Again: no one has endeavoured to show that these are different; but they say that these are the same principles of all things; and they pass by that which was first doubted by us, as if they apprehended this to be a thing of a trifling nature. But this is of all things the most difficult† to contemplate, and, in order to know the truth, the most necessary, whether *being* and *the one* are the essences of things, and each of them is not any thing else, but this is *the one*, and that is *being*? or, whether it is requisite to inquire what *the one* is, and what *being* is, as if there was another nature subject to these? For

things *Time*; because, where there is generation (says Proclus) there also is time. The second of these principles, therefore, possesses royal honours, from the perfection which it derives from *time*: for, that which is most eminently the first measures its infinite power.

* We have already said, that the principles of things corruptible are incorruptible, but not immoveable. But the principles of things incorruptible are both incorruptible and immoveable.

† This is properly the thirteenth Problem, but is here the twelfth, because, as we have before observed, the sixth is altogether omitted. In the former part of these Notes we have related what the Pythagoreans and Plato say; and shown, that Empedocles is not discordant from them in these dogmas; though this perhaps may be asserted of the philosophers of the Ionic sect, who thought that *the one* and *being* were water or fire, or something of this kind.

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some think that the nature of *the one* subsists in that, and others in this manner. For Plato, indeed, and the Pythagoreans, do not think that *being* differs from *the one*, but that this is the nature of them, as if the essence was the same, to be one, and to be a certain being. But those who are conversant with Physics accord with Empedocles, who, as if bringing us back to that which is more known, says that *the one* is *being*. For he may appear to assert that this is friendship; since this is the cause to all things of their being one. But others say that fire, and others again that air, is this *one* and *being*, from which beings subsist and are generated. And, in like manner, those who establish more elements than these; for it is necessary for these also to assert, that *being* and *the one* are as numerous as they say principles are. But it happens, if any one does not admit * that *the one* and *being* are a certain essence, that

* Even the apparent necessity of this reasoning is very great: for, if there are universals, much more are there things most universal; and, if there are things most universal, there are also *the one* and *being* abstracted from all things. For these are the most universal of things. But, if these are not, things the most universal would be no more: or it would follow, that there is neither science, nor that things themselves are naturally of the same species among themselves; but that, through chance and instability, these are of the same species with those, but of a dissimilar species from others. For, unless there was one pre-subsisting form, through the participation of which things are of a similar species, but, through non-participation of it, of a dissimilar species, what effective, preserving, and inevitable (*αναποδραστος*) cause can there be of these?

But, if we more nearly examine what is here said, we shall find that both species and universals are at the same time taken away with the hypothesis, and that sensibles themselves are no less circumscribed. For, unless there is a *one* abstracted from all things, or, in other words, which is neither something belonging to soul, nor to intellect, nor even to being itself, there can neither be any thing of universals nor of particulars. There cannot be the former, because they are naturally *one* and *many*, *i. e.* in these unity predominates over multitude; nor the latter, because they are *many* and *one*, *i. e.* multitude predominates over unity. But it is necessary that a nature which is unity alone, without any connection with multitude, should have a subsistence prior to these; and, at the same time, it must be observed, that, unless an imparticipable *one* presides over things which are participated, there will not be a cause of union to beings; in the same manner as the cause of every possible kind of essence is taken away from things by those who deny that being itself is the principle of all beings. For, as the one principle of good to things is *the good itself*, which is neither the good of any particular thing, nor any thing else besides good; and as the cause to all things of being moved is that which is self-motive, and, of that which is self-motive, motion itself, which is neither the motion of this particular thing, nor any thing else besides motion, but, as we have said, is motion itself:—in like manner, all things which are knowable originate from knowledge itself, and all beings, so far as beings, proceed from being itself: but things which are united receive their union from *the one*, which is abstracted from all things.

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neither can any one of other universals have a subsistence; for these are, of all things, especially universal. But, if neither *the one itself* nor *being itself* is some particular thing, much less will any thing else have a subsistence, except such things as are called particulars. Further still: if *the one* is not essence*, it is evident that neither will number have a subsistence as a certain nature separate from beings: for number is monads; but the monad is a certain one. But if *the one* itself is some particular thing†, and likewise *being* itself, it is necessary that the essence of them should be *being* and *the one*; for nothing else is universally predicated of them‡ but these very things. But, indeed, if *being itself* and *the one itself* have a subsistence, a great doubt§ will arise how any thing besides these subsists. I mean, how there will be more beings than one: for, that which is different from being is not||; so that, according to

* It follows, indeed, from necessity, that neither is there any essential number, *the one* having no subsistence, yet not for the reason assigned by Aristotle; for it is merely logical, since he immediately falsely assumes that specific and essential numbers consist from unities. But, even though it should be admitted that they do consist from unities, yet certainly *the one*, which is the subject of the present speculation, does not consist from things which are of the same species. The assertion, therefore, of Aristotle is in a certain respect true, so far as unity in numbers is an image of *the one itself*. If, then, there is something abstracted from the universality of things, there will also be some number which is an intellectual form, and an essence which is especially the first and most intellectual. But if *the one itself* is not, neither will the principle be; but, the principle not subsisting, neither will that which is derived from the principle subsist.

† This also is rightly said by Aristotle: but he uses *essence* in a more general way for *the one*: because, if there is such a thing as *the one* itself, or that which is *the one* only, and nothing else, it is above essence: for essence is indigent of *the one* to its subsistence; but *the one* is not indigent of essence, lest, instead of *the one*, it should become that which is united.

‡ Here, again, that which is asserted is true; but it is requisite to add, that though they are not predicated of other things, yet they are to all things the causes of being, and of being united.

§ It is, indeed, a subject of profound speculation, how, from *the one*, which contains in itself no appearance of multitude, and which has no diversity, all things subsist. Plotinus has considered this subject with his usual profundity; and it appears, from Syrianus, that it was discussed by Porphyry and Jamblichus. It may suffice at present to say, that the Problem can perhaps only be solved by assigning the exuberant fecundity of *the one* as the cause of the subsistence of all things; or, in other words, by conceiving that *the one*, at the same time that it is transcendently simple, is exuberantly prolific.

|| Parmenides said, that being was one, because he considered the whole of an intelligible essence as transcendently united. He also called that which is different from being, or a sensible

to the reasoning of Parmenides, it necessarily happens that all beings are one, and that this is being. But in both cases a difficulty ensues*: for, whether *the one* itself is not essence, or whether it has a subsistence, it is impossible that number can be essence. But why it cannot, if *the one* is not, has been shown by us before. And if *the one* is, the same doubt as that respecting *being* remains: for, that from which there will be another one, besides the one itself, must necessarily be itself not one. But all beings are either one or many, each of which many is one.

Further still: if *the one* is indivisible, according to the axiom of Zeno, it will be nothing: for that which neither when added nor when taken away makes any thing to be greater, according to him, does not rank among beings; because being is magnitude, and, if magnitude, corporeal; for this is in every respect being. But other things, when added, in a certain respect make that which is greater, and in a certain respect nothing. Thus, a superficies and a line make that which is greater; but this is by no means true of a point and

fible nature, non-being; and said that non-being is nothing, because it is not in dignity equal to being. Nor is it any thing with relation to being, nor does being derive any thing from its subsistence: for, as Socrates will remain one, though he should have many images; so, the whole of an intelligible essence remains one, notwithstanding the subsistence of the sensible universe, which, in reality, is nothing with relation to the intelligible world, except that it depends from it, and thence derives its being and perfection.

* We have already said, that, if *the one* has no subsistence, there will not be number; for, the principle being abolished, it will neither itself ever be generated from another thing, nor any other thing from it. But why does it follow, that number will not be, even if *the one* does subsist? Is it through a hostile attack (*επιστολή*) of the first hypothesis in the Parmenides of Plato? But the multitude, which is there denied of *the one*, does not destroy the multitude proceeding from it, but destroys the subsistence of any multitude in *the one*. For, if it is *truly one*, it will not be many. But Aristotle here pretendedly assumes, that whatever is besides *the one* is nothing; for all beings are either unity, or consist from unities. If, therefore, there is any unity proceeding from *the one*, it will be different from *the one*; but, since it is different from *the one*, it is nothing. And that which is nothing is a non-entity; because every being is either one or many, each of which is one thing. In answer to this we may reply, that it does not follow that a thing proceeding from *the one* is nothing. For, if it is not that one from which it proceeds, must it be concluded that it is not one, or nothing? We ought rather to say, that it is one in a second, and again in a third degree, and so on. For, even the last of things last, the fleeting perishable and material natures of sensibles, participate of *the one*. And where is there any thing intelligible and divine which is deprived of unity? The prolific nature of *the one*, therefore, is a sufficient cause, and it is not necessary to investigate the subject from which beings subsist.

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a monad. But, as he speaks thus importunately, and it happens that there is something indivisible, the following arguments may be urged against him:—The addition of a thing of this kind does not make that which is greater, but that which is more. But how will magnitude be composed from one, or more than one, of this kind? for it is just as if it should be said, that a line consists of points*. But if any one should apprehend, according to the assertion of some, that from *the one itself*†, and another certain nature which is not *the one*, number is composed; yet we must, nevertheless, investigate on what account, and how, that which is generated is at one time number, and at another magnitude, if that which is not *the one* and inequality are of the same nature? For it does not appear how, from *the one* and this nature, nor how from a certain one and this nature, magnitudes can be produced.

* Essential magnitude is impartible, divine, and intelligible, and shines forth profoundly united with the first of beings. But sensible magnitude, depending through nature as a medium on the Artificer of the universe, who is the offspring of *the good*, i. e. of *the one*, becomes from thence united: for, through imitation of *the one*, all things impart union to natures posterior to themselves. What similitude, therefore, is there between saying that a line consists from points, which is proved to be impossible, and that *the one* itself produces various magnitudes? There is then nothing common in the two assertions, except that, as all other things attract a certain vestige, and ultimate resemblance of *the one*; so, a point among indivisibles appears to imitate *the one*. It is, however, imperfect; it is not self-subsistent; and that which it is, is something belonging to a thing different from itself, that is, a line. It is also unprolific and destitute of intellect; but *the one*, being the cause of every thing perfect, and of *true being*, and abiding in itself, is eminently generative of the life of all things, and is the principle of intellect. But it is itself better than all these things of which it is the principle.

† Aristotle here doubts, apparently against Plato, how from *the one* and *the indefinite duad*, which he calls *non-one* and *inequality*, he at one time produces number, and at another magnitude: for, neither, says he, if he conjoins number with the indefinite duad, instead of *the one*, will it be manifest how magnitude subsists from it. In answer to this we say, that the intelligible monad and duad generate the number which subsists in the intelligible world; and that these generate sensible analogous to intelligible magnitude. But corporeal form is, as it were, *the monad* and *the one*, and matter is the last imitation of *the indefinite duad*, from which two sensible magnitude subsists. But, if Aristotle wishes to rank nature from its generative power according to *the one* and *the monad*, we must consider form itself according to number. On which account magnitude must be said to subsist in one way from the monad and the indefinite duad, when the monad does not resign itself to the composition of magnitude, and in another way from number and the indefinite duad, when they are considered as the elements of magnitude.

CHAP.

C H A P. V.

BUT, consequent to these things, it is dubious, whether numbers and bodies, superficies and points, are certain essences or not. For, if they are not *, we shall not be able to apprehend what being is, and what are the essences of things. For participated properties and motions, relatives, dispositions, and ratios, do not appear to signify the essence of any thing. For all these are predicated of a certain subject, and no one of them can be said to be this or that particular thing. But those things which especially appear to signify essence, are water, and earth, and fire, from which composite bodies consist: but the heat and cold of these, and things of this kind, are passions, and not essences; while body alone, which is passive to these things, sustains them as a certain being and essence. But indeed body is less essence than superficies, and superficies than line, and line than unity and a point; for by these body is defined. And these indeed appear capable of subsisting without body, but it is impossible that body can subsist without these. Hence the many think, and the ancients thought, that essence and being are body, but that other things are the participated properties of body; so that the principles of bodies are also the principles of beings: but the moderns, and those who are considered as wiser than these, think that essence and being are numbers. As we have said, therefore, if these things are not essence, there will not, in short, be

* That which bounds has not always more of being than that which is bounded; but this is only true when the former is abstracted from the latter; as art with respect to artificial, and nature with reference to natural bodies. The contrary, therefore, takes place, when that which bounds gives itself up to the completion of the things bounded, and loses its own proper nature through profoundly mingling with that which it terminates. Nor does it always follow, that a thing which takes away, and at the same time is not taken away, has more of essence than that which has an opposite mode of subsistence, (since, according to this, stones would have more of being than a house, timber than a ship, and, in short, any kind of matter than that which is formed from it;) but this is only true when that which takes away is not any part of that which is at the same time taken away, nor an element, nor an extremity of it, nor in the order of things which give themselves up to its composition. Thus, arithmetic has more of the essential than geometry; for, when taken away, geometry is also taken away; and it is neither any part, nor element, nor extremity of geometry, nor that from which it is composed, so as to lose its own nature in the composition. True genera, therefore, are prior to species; and substance, to accidents. But superficies, as being more debile than body, is prior to body; but it is not prior as having more of essence. It is however evident, that the reasoning of Aristotle is directed to superficies as inherent in substance.

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any thing that is essence, nor any thing that is being. For it is not worth while to call the accidents belonging to these, beings. But indeed, if this should be granted, that lengths and points are more essence than bodies*, yet we do not see the kind of bodies to which these must belong; (for it is impossible that they can subsist among sensibles.)

Again: all these appear to be the divisions† of body; one into breadth, another into depth, and another into length. And besides this, in a similar manner, every kind of figure is in a solid: so that, if neither mercury is in a stone, nor the half of a cube in a cube, so as it is defined, neither therefore is superficies in body‡. For, if this were the case with any one, it would indeed be that which separates the half. But there is the same reasoning respecting a line, a point, and a monad. So that, if body is eminently essence, and these are more essence than body, but at the same time these neither are, nor are certain essences; what being is, and what is the essence of things, will fly from our pursuit. For, in addition to what has been said, the irrational consequences respecting generation§ and corruption will take place. For essence, when it formerly was not, but now is; or when it for-

* These, however, subsist in sensible bodies physically and materially; and on this account they do not preserve the nature which they announce; as neither does any other of material forms. Yet they are nevertheless in *mathematical* body, which, though not *sensible*, is at least *imaginable*, or, in other words, has a subsistence in the phantasy; and besides this, they subsist in the reasons or productive principles belonging to opinion, and in intelligible species. And yet, though they subsist in so many ways, they do not prevent the subsistence of other essences according to each order of beings.

† Divisions, indeed, inexist in bodies, are by no means the essences of individuals; but must not *first difference*, by which all things are distinguished, introduce a division established according to species and according to essence?

‡ In answer to this it may be said, that, in consequence of the subsistence of *energy*, it is not necessary that there should also be *capacity*, or that, *capacity* not yet existing, there should likewise not be energy; but nothing hinders but that there may be one superficies in energy, as that which bisects the cube. For there are infinite divisions in capacity; but, of things finite in energy, there is no reason why divisions in energy may not also be considered.

§ The reasoning of Aristotle is as follows: Every essence which sometimes is and sometimes is not, is circularly led to being through generation, but to non-being through corruption. But these extremes of magnitudes either are, or are not, without time; they are not, therefore, essences. And the reasoning is indeed true, since every essence which is generated and corrupted requires a material cause. But these extremes are not things of a material nature. Likewise, when a line is divided, two points are produced: for, says he, a point, being one, is not divided into two, since it is indivisible. But these extremes, not having a prior existence, subsist from division without time and without generation.

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merly was, but afterwards is not, appears to suffer these things, viz. to be generated and corrupted. But points, lines, and superficies, do not admit either of generation or corruption, though they sometimes have a subsistence, and sometimes not. For, when bodies mutually touch or divide each other, by touching these become one; but, when they are divided, they become two. So that points, lines, and superficies, have no subsistence when bodies are conjoined, but are then corrupted; and when bodies are divided they have a subsistence, though prior to this they had not a being. For a point which is indivisible is not divided into two; and if they are generated and corrupted, they are made from something. The like takes place also respecting *the now* in time*. For neither does this admit of generation and corruption: but at the same time it always appears to be something else, though it is not a particular essence. But it is evident that the like consequences also ensue respecting points, lines, and superficies; for the same reasoning takes place. For all these, in a similar manner, are either bounds or divisions.

CHAP. VI.

IN short, some one may doubt why it is requisite to investigate certain other natures besides sensibles, and such as have a middle subsistence †, as, for

* That there are certain things, says Aristotle, which, not having a prior existence, emerge from generation and vanish without corruption, and no one of which is a substance, *the now*, or instant, according to a temporal division, testifies; to which also a point is assimilated. In answer to this, it may be said that though these are not essences, yet they may possess some kind of being; for being is multifariously predicated.

† The whole reasoning of Aristotle here is as follows:—If, besides sensible and mathematical natures, we establish ideas, since sensible individuals are many (as for instance, many horses, many oxen, and many men), and also since mathematical entities are many (for there are many triangles, circles, spheres, and pyramids); but it is requisite that we should not stop at the many, but ascend to the monads which preside over the several individuals; viz. one man, one triangle, one circle, &c.;—hence it is necessary that each of the species should be one in number; but, as we have proved in the tenth problem, principles cannot be one in number. Species therefore, that is, ideas, cannot subsist. To this we reply, that though principles which subsist in their effects cannot, perhaps, have a numeral limit, yet it does not follow that this will be the case with productive and supreme causes. For, if this were the case, neither would those separate intelligibles, the existence of which Aristotle demonstrates in the twelfth book of this work, be limited according to number, though he evinces that they are so. It must also be observed, that the ancient speculative philosophers did not recur to ideas for this cause alone.

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instance, the forms which we establish. For, if mathematical species differ from things which are here in some other respect, yet they do not at all differ in this, that many are of the same species; so that the principles of them will not be bounded by number, as neither, of the lines which are here, are all the principles bounded by number, but by species; unless some one takes the principle of this particular syllable, or of this particular voice. For the principles of these will also be bounded by number. And in a similar manner with respect to the natures which have a middle subsistence: for there those things which are of a similar species are infinite. So that, if there are not certain other things besides sensible and mathematical natures, such as some assert forms to be, there will not be an essence one in number and species; nor will certain principles of beings be so many in number, but in species. If, therefore, this is necessary, it is also necessary, on this account, that forms should have a subsistence: for, although those who assert these things do not express their meaning distinctly, yet this is what they wish to say; and they must necessarily affirm that every form is a certain essence, and that no one of them subsists according to accident. Indeed, if we admit that forms are, and that principles are one in number but not in species, we shall assert those impossibilities which must necessarily happen.

But a doubt which is near to this is, whether elements subsist in capacity or in some other manner*. For, if in some other manner, there will, in a certain respect, be something else prior to principles†. For capacity is prior to that cause. But it is not necessary that every thing which is in capacity should subsist in that manner. But, if elements are in capacity, it will happen that no one being will have a subsistence‡. For it is possible for that to be which as yet
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* He here inquires whether elements subsist in *capacity* or *energy*. For by the words, *or in some other manner*, is signified *in energy*; Aristotle, perhaps, studiously concealing this phrase, lest he should take away the doubt belonging to the problem. For who will deny that the perfect is more principal than the imperfect? For the same reason, he does not say *causes* or *principles*, but *elements*.

† As if he had said: If any one admits that elements are principles, since capacity precedes every thing which is in energy, there will be something prior to principles. But now also, in the same manner as before, he conceals the name of energy, together with this—that his argument is merely logical. For though, among generated natures, a subsistence in capacity is prior to a subsistence in energy, yet this is not the case in *wholes*, nor in divine natures, as Aristotle himself demonstrates in the ninth book of this work.

‡ His reasoning is now directed to the opposite; viz. that the elements of things ought not
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is not; for non-being is generated: but nothing of things impossible is generated. It is necessary, therefore, that these doubts should arise concerning principles, and whether universals, or, as we say, particulars, have a subsistence*. For, if there are universals, they will not be essences: for nothing of things common signifies a certain subject, but quality. But essence is a subject. But if that which is predicated, and may be exhibited in common, is a subject,

to be supposed to subsist in capacity. But the demonstration is as follows:—That which is possible is alone generated; for neither that which is impossible, nor that which already is, can be generated. That which is in generation, or in a progression from that which is not to that which is, is not yet. That which is not yet, may happen not to be. So that, if principles are in capacity, it may so happen that no being may originate from them. But he explains the minor proof thus: Nothing of impossibles is generated, to which that is equivalent, that what is possible is alone generated. The medium, or middle, is as follows: That which is in generation, or becoming to be, is non-being. It may therefore be said, That neither is that which is in energy that which is generated. But that it may happen that a thing which is not yet may not be, Aristotle considers as manifest in these propositions; because it is possible that it may be naturally adapted to proceed into energy, and yet this may not altogether take place. All these propositions, indeed, have great power, if any one should assert that all principles subsist in capacity, and that no one of them is in energy.

* This is the fourteenth in the order of the problems, but it is nearly the same with the tenth. For Aristotle here also inquires whether principles are things universal, or individuals; which is nearly the same with the inquiry, whether they are bounded in species or in number. But he says that, if we suppose them to be universals, we shall deprive them of an essential subsistence. For universals are not essences. Socrates himself is at least three essences; individual, specific, generic. But, if principles are not universals, they are either unknown, or they have something prior to them; each of which is irrational. For, if it be said that principles are unknown, then nothing whatever will be known; and if they are known, they are known through universals. There will therefore be something prior to them of a more comprehensive nature.

But we have often said that principles properly so called, *i. e.* the highest principles, are above the universal reasons of nature, and the productive and gnostic principles of the mundane soul. But what Aristotle now says is not attended with any *necessary* consequence; for neither is every universal unessential; since, if this were the case, nothing universal would be eternal, and fabricative of particulars; nor do we know particulars through universals of posterior origin (*υστερογενες καθολικον*), or, in other words, by an abstraction of that which is common in sensibles. For either we know scientifically, for instance, that every man is a mortal rational animal, or we do not. If we do, this knowledge could not be the result of an abstraction from the individuals of the human race; because, to effect this, such abstraction should be made from *all* the existing individuals of our species; which is impossible. And if we do not know this scientifically, such a conclusion is not indubitable and necessary. And lastly, Aristotle himself will not say that any universals transcend immoveable genera. But even Alexander acknowledges that the arguments of Aristotle with respect to nearly all these particulars are merely dialectical.

Socrates himself will be many animals, and man and animal, if each signifies a subject, and that which is one. If therefore principles are universals, these things will happen ; but if they are not universals, but such as particulars, there will not be objects of scientific knowledge. For all science respects things universal : so that there will be other principles universally predicated, prior to principles, in order that there may be a science of them.

ARISTOTLE'S

ARISTOTLE'S METAPHYSICS.

B O O K IV.

C H A P. I.

TH E R E is a certain science which speculates being so far as being, and the things which are essentially inherent in it. But this science is not the same with any one of those which are called partial sciences. For no one of the others considers being universally so far as being; but, cutting off a certain part of it, they speculate that which is accidental to this part, as is the case with the mathematical sciences. But, since we investigate principles and the highest causes, it is necessary that they should be essentially principles and causes of a certain nature. If, therefore, those also who have investigated the elements of beings, have investigated these very principles, it is also necessary that the elements of being should not subsist according to accident, but should subsist so far as they are beings. On which account, we also must take into consideration the first causes of being, so far as being.

C H A P. II.

BU T being is, indeed, predicated variously, but with reference to one, and to one certain nature; and not equivocally, but in the same manner as every thing.

thing salubrious is referred to health, partly from preserving, partly from producing, partly from indicating, and partly from being susceptible of health. This likewise takes place, in the same manner as that which is medicinal is referred to health: for one thing is called medicinal, because it has a medicinal power; but another, because it is naturally adapted to procure health; and another, because it is the work of the medicinal art. And, in a similar manner, we admit the predication of other things. Thus, too, being is indeed predicated variously, but the whole of it with reference to one principle. For some things are called beings because they are essences; others, because they are the passions of essence; and others, because they are the way to essence, or are corruptions, or privations, or qualities, or effective or generative of essence, or of things predicated with reference to essence, or to the negations of some one of these, or of essence. On this account also we say that non-being is non-being. As, therefore, there is one science of all things sane, the like also takes place in other things. For it is the province of one science to speculate, not only concerning things which are predicated according to one, but also concerning things which are predicated with reference to one nature. For these, likewise, in a certain respect are predicated according to one. It is evident, therefore, that it is the province of one science to speculate beings so far as they are beings.

But every where science is properly of that which is first *, and from which other things are suspended, and through which they are predicated. If, therefore, this is essence, it will be proper that a philosopher should possess the principles and causes of essences. For, of every genus † there is one sense, and one science; as, for instance, since there is one grammatic science, it speculates all vocal sounds. On which account also, to speculate such things as are the species of being, and such as are the species of species, is the province of one science in kind. But, if *being* and *the one* are the same and one nature, because they follow each other, in the same manner as principle

* Thus medicine, which is conversant with every thing that partakes of health, is properly and principally the science of health, from which the rest derive their name. In like manner, the discipline respecting things good is principally the discipline of the first and most perfect good. The science of beings, therefore, will be principally the science of the first being, or being itself. In like manner, the science of divine natures is properly the science of God.

† Alexander observes, that Aristotle uses *genus* here in a more general way for nature.

and

and cause, but not as being signified by one definition, it is of no consequence, if we consider them in a similar manner, but is indeed more conducive to our purpose: for, one man, and existing man, and man are the same. Nor does it signify any thing different, according to a repeated diction, to say, man is, and man, and one man. But it is evident that being is not separated, neither in generation nor corruption. And, in like manner with respect to *the one*; so that it is evident that addition in these signifies the same thing, and that *the one* is nothing else besides *being* *. Further still: the essence of every thing is one, not according to accident. And in a similar manner that which is some particular being: so that, as many as are the species of *the one*, so many also are species of *being*, concerning which to speculate the formal cause is the province of the same science in kind: but, I say, as for instance, concerning the *same*, and *similar*, and other things of this kind, and things opposed to these. But nearly all contraries are referred to this principle. These things, however, are considered by us in the election of contraries †; and so many are the parts of philosophy as there are essences. So that it is necessary, that one kind of philosophy should be first, and another secondary. For, *being* and *the one* are things which immediately possess genera ‡; on which account sciences also are consequent to these. For, a philosopher is similar to a mathematician; since mathematics also has parts, containing a first and second science, and another consequent to these.

But, since it is the province of one science to speculate opposites, and multitude is opposed to *the one*, it is the business of one science to speculate negation and privation, because *the one* is speculated both ways, of which there is negation or privation. For we either simply say negation is not present, or that it is not present to a certain genus. Hence, there, difference is present to *the one*, except that which is in negation (for negation is the absence of it). But in privation there is a certain subject nature, of which privation is predicated: and multitude is opposed to *the one*. So that it is the province of the aforesaid science to know the opposites to the things which we have men-

* This is true only of that *one* which is consubstantial with the first *being*, concerning which we have already spoken in the notes to the third book, and shall again speak in the notes to the fourteenth book.

† According to Laertius, Simplicius, and others, Aristotle wrote a treatise *περί τ'αγαθού*, concerning the Good, which is unfortunately lost, and to which Alexander says he now refers.

‡ Viz. *being* and *the one* are predicated of certain genera.

tioned,

tioned, viz. the different, the dissimilar, the unequal, and such other things as are predicated, either according to the same, or according to multitude and *the one*; among the number of which is contrariety. For contrariety is a certain difference; but difference is diversity. So that, since *the one* is multifariously predicated, these also are predicated in various ways: but, at the same time, it is the business of one science to know all these. For it does not follow that, if they are multifariously predicated, the speculation of them belongs to another science. But if the reasons are referred, neither according to one, nor to one, then it is the business of another science. But, since all things are referred to that which is first, as, for instance, such things as are called one are referred to a first one, we must say, that the like also happens respecting same, and different, and contraries. So that by dividing, as often as any particular is predicated, we must refer it to that which is first in each category, that we may know how it is predicated with respect to that first. For some things are predicated from possessing that first; others, from making; and others are predicated according to other such like modes.

It is evident, therefore, as we said in the doubts* which we enumerated, that it is the province of one science to speculate both concerning these and essence. But this was one of the things which we mentioned among the doubts. And it is the business of a philosopher to be able to speculate about all things. For, if not of the philosopher, who will he be who considers whether Socrates, and Socrates sitting, are the same, or if one is contrary to one, or, what contrary is, or, in how many ways contrary and opposite are predicated? And in a similar manner respecting other things of this kind. Since, therefore, these things are the essential properties of *the one* so far as one, and of *being* so far as being, but not so far as *the one* and *being* are numbers, or lines, or fire, it is evident that it is the business of that science both to know what they are, and the things which are accidental to them. And those who consider these things, do not err in this respect as not philosophizing, but because essence, of which they understand nothing, has a prior subsistence. For, as of number so far as number there are peculiar properties; such as imparity, parity, commensurability, equality, excess, and defect; and these things subsist in numbers both considered by themselves and with relation to each other; and in a similar manner as there are other peculiar properties belonging to that which is solid and immoveable, to that which is

* Aristotle here refers to the third book.

moved,

moved, to the light and the heavy; so also there are certain peculiar properties belonging to being so far as being. And these are the things the truth concerning which it is the business of the philosopher to consider; of which this is a token, that those who are skilled in dialectic, and sophists, assume the same figure as the philosopher: (for the sophistic art is only apparent wisdom, and those who are skilled in dialectic discourse concerning all things,) but being is common to all things. They discourse, however, concerning these things, because they properly belong to philosophy. For the sophistic and the dialectic arts are employed about the same genus with philosophy; but philosophy * differs from one in the mode of power, and from the other, in the choice of life. For the dialectic art is pirastic respecting those things of which philosophy possesses the knowledge: but the sophistic is apparently an art, but is not really so.

Further still of contraries, the other co-ordination, is privation †: and all things are referred to being and non-being, and to *the one*, and *multitude*; as for instance, *rest* partakes of *the one*, but *motion* of *multitude*. But almost all men acknowledge that beings and essence consist from contraries. For all assert that principles are contraries: according to some, the principles of things being the even and the odd; according to others, the hot and the cold; according to some, bound and infinity; and according to others, friendship and strife. All other things, too, appear to be referred to *the one* and multitude. But reduction is assumed by us [in ‡ the second book concerning the good]. Principles however, both considered absolutely and as admitted by others, fall into these as into genera. From hence therefore also it is evident that it is the province of one science to speculate being so far as being. For all things are either contraries, or consist from contraries. But the principles of contraries themselves are *the one* and multitude: and these belong to one science, whether they are predicated according to one or not; which perhaps is the truth. But at the same time, though *the one* is predicated in various ways,

* Both the first philosophy and dialectic discourse concerning being and its accidents, and each is syllogistic. But with the first philosophy this syllogistic power is demonstrative of true and real beings; but the dialectic art explores the truth indeed, but reasons only probably. See more concerning the first philosophy, or scientific dialectic, in the Introduction.

† Of all contraries, one order is *privation*, and the other *form*.

‡ I have inserted these words from the Commentary of Alexander, as they are certainly necessary to the sense: the words of Alexander are, "Rursus ad ea quæ in secundo libro de bono demonstrata sunt relegat nos."

yet other things are referred to the first, and in a similar manner contraries. On this account, though *being* and *the one* are not universal and the same in all things, or separate, as perhaps they are not, yet some things are referred to *the one*, and others are placed in a consequent order; and, on this account, it is not the business of a geometrician to speculate what contrary, or the perfect, or *the one*, or *being*, or same, or different, may be, unless from hypothesis. That it is therefore the business of one science to speculate being so far as being, together with the things which subsist in it so far as being, is evident: and also, that the same science is contemplative not only of essences, but of things subsisting in essences, together with such particulars as have been mentioned; and likewise of prior and posterior, of genus and species, of whole and part, and other things of this kind.

C H A P. III.

It must be declared whether it is the business of one or of a different science to speculate concerning those things which are called axioms* in the mathematical disciplines, and concerning essence. But it is evident that it is the province of one science, and that the science of the philosopher, to consider these things. For they are present with all beings, but not to any particular genus separate from others. And all sciences indeed use these because they pertain to being so far as being; but every genus is being. They use them, however, so far as is sufficient to their purpose; *i. e.* so far as they contain the genus respecting which they bring demonstrations. So that, since it is evident that they are present to all things so far as they are beings (for this is common to them), the speculation of these also is the province of that science which knows being so far as being. On which account, no one of those who consider things according to a part, endeavours to say any thing concerning them, whether they are true or not. For neither the geometrician nor the arithmetician does this, but certain natural philosophers, who in so doing act properly. For they alone think they should speculate concerning the whole of nature, and concerning being.

But, since there is yet something above that which is physical (for nature is one particular genus of being), the consideration of these things also will pertain to that which is universal, and to him who contemplates the first essence.

* See the notes to the third book.

The

The natural science, indeed, is a certain wisdom, but not the first. But those who endeavour to speak concerning the truth of axioms, and to show how it ought to be admitted, do this through their ignorance of analytics*. For it is requisite to enter on these things with previous knowledge, and not while hearing them mentioned begin to investigate. Hence, then, that it is the business of the philosopher, and of him who speculates the whole of essence, so far as it is *naturally such*, to consider likewise syllogistic principles, is evident. But it becomes him who especially knows what pertains to every genus to declare the most stable principles of a thing. Wherefore it also pertains to him to assign the most firm principles of all things, who speculates beings so far as they are beings. And he who does this is the philosopher. But that is the most stable principle of all things, concerning which it is not possible to be deceived. For it is necessary that a principle of this kind should be most known (for all men are deceived respecting things which they do not know); and, likewise, that it should be unhypothetic. For that is not hypothesis which it is necessary for him to possess who understands any thing whatever which ranks among beings. But that which it is necessary for him to know who knows any thing, must necessarily be possessed by him who knows any thing. That a principle, therefore, of this kind is the most stable of all things, is evident.

What this principle, however, is, must in the next place be declared. For it is impossible that the same thing can at the same time be present and not be present with the same thing, according to the same; and all such things as we have already discussed for the purpose of removing the difficulties which result from logical inquiries. But this is the most stable of all principles: for it has the above-mentioned condition. For it is impossible to apprehend that any thing can be the same and yet not the same, as some think Heraclitus asserted; since it is not necessary to think that a thing is, because it is asserted by some one to be. But if it does not happen that contraries are present with the same thing (but the usual additions have been made by us to this proposition), and opinions are contrary, which are adverse in a contradictory manner; it is evident that it is impossible to conceive the same thing, at the same time, to be and not to be. For he who is deceived about

* Aristotle, in his last Analytics, shows that there must necessarily be principles of demonstration, and that these principles must be indemonstrable. See my paraphrased translation of the first book of this excellent work, prefixed to my translation of Proclus on Euclid.

this thing would at the same time possess contrary opinions. Hence, all who demonstrate reduce their demonstrations to this last opinion: for this is naturally the principle of all other axioms.

C H A P. IV.

THERE are, however, certain persons who, as we have observed, assert that the same thing may be and may not be, and think conformably to what they assert. Many of those, too, who discourse concerning nature use the same assertion. But we now assume that it is impossible for the same thing to be and not to be; and through this we have shown that this is the most stable of all principles. Some, however, through want of erudition, have thought it worth while to demonstrate this axiom. For it is want of erudition not to know what are the things of which it is proper to seek demonstration, and what the particulars of which a demonstration is not requisite. For, in short, it is impossible that there should be a demonstration of all things. For, if this were admitted, there must be an infinite progression: so that neither thus would there be any demonstration. But if it is not proper to seek demonstration of certain things, yet these men are not able to assign what that is which they consider as rather deserving to be called a principle of this kind. It may, however, be demonstrated elenctically that this is impossible, if only he who doubts says any thing. But, if he says nothing, it is ridiculous to inquire a reason of him who does not speak, so far as he does not speak. For such a one, so far as he is such, is similar to a plant. But I say that to demonstrate elenctically differs from demonstration, because he who demonstrates seems to inquire that which is sought after in the beginning; but when there is another cause of this kind, it will be confutation, and not demonstration. But the beginning of discourse to any one of these should be, not to require him to assert that any thing is or is not (for perhaps some one may think that this is the thing which was required from the beginning), but to desire him to signify something both to himself and another. For this is necessary, if he says any thing: but if he does not, it is impossible there should be any discourse with such an one, either from himself, to himself, or to another. But if any one admits this, there will be demonstration: for now there will be something defined. Yet, not he who demonstrates, but he who sustains, is the cause of this: for, taking away discourse, he sustains discourse.

In

In the first place, therefore, it is evident that a name signifies this particular thing, either to be, or not to be: so that not every thing will subsist in this particular manner, and yet not in this manner. Further still: if man signifies one thing, let it be this, a biped animal. But I say this signifies one thing, when if this thing is a man, whatever is a man is a biped animal. But it is of no consequence, though some one should say that it signifies more than one thing, if they are only definite; for he may give to each definition another name. I say, for instance, if he should assert that man does not signify one thing, but many things, one definition of one of which is a biped animal. There are also many others, but the number of them is definite: for the proper name may be placed in each of the definitions. However, if some one should not place it, but should say that it signifies infinite particulars, it is evident there could be no definition of it, nor any discourse about it. For, not to signify one thing is to signify nothing. But when names have no signification, then in reality the discourse of men with each other, and of a man with himself, can no longer subsist.

For it is not possible to understand any thing when not understanding one thing; since, if it were possible, one name must be imposed on this thing. Be it therefore, as was said at first, that a name signifies something, and that it signifies one thing. Hence, that man exists, will not signify the same thing as that man does not exist; if man signifies not only that which is asserted of one thing, but one thing itself. For we do not think that to signify one thing, is to predicate of one thing; since, if this were admitted, a musician, that which is white, and a man, would signify one thing: so that all things will be one, for they will be synonymous: and it will not be possible for the same thing to be and yet not be, unless so far as equivocally considered. Just as if that which we call man, should be denominated by others not man. However, that which is doubted is not this, whether it is possible that the same thing can be a man and yet not a man in name, but whether this can take place in reality.

But if man and not man do not signify that which is different, it is evident that *to be* will be the same as *not to be* a man; for they will be one thing; since this signifies that they are one thing, as a tunic and a garment, if there is one definition of each. But if they are one, to be and not to be a man signify one thing. It has been shown, however, that they signify that which is different. It is necessary therefore, if any thing is truly called a man, that it must be a biped animal: for this is that which man signifies. But, if this is necessary,

necessary, it is not possible that this very thing should not be a biped animal. For this is what is signified by existing necessarily, viz. that it is impossible it should not be a man. It is not therefore possible that it should be true to say, at the same time, that the same thing is both a man and not a man. The same reasoning, too, takes place with respect to the not being a man. For the being of a man signifies something different from the being of that which is not a man; since to be white, and to be a man, signify things different. For that is much more opposed; so that it signifies something different.

But, if any one should say that white signifies one and the same thing with man, again we say that which was said before, that all things, and not only opposites, will be one. But, if this is not possible, that which has been said will happen, if an answer is given to the interrogation. But, if he who is simply interrogated adds also negations, he will not answer to the interrogation: for, nothing hinders but that the same thing may be man and white, and other things infinite in multitude. Nevertheless, when interrogated, if it is true to say that this is a man or not, he must answer by that which signifies one thing, and must not add, that it is both white and large. For it is impossible to pass through accidents, because they are infinite. Either, therefore, he must pass through all, or no one of them. In a similar manner, therefore, if the same man and non-man subsisted infinitely, if we are interrogated if man is, we ought not to answer, that at the same time non-man also is; unless in our answer we likewise include such things as happen, if man is, or is not. But he who does not this will not discourse.

In short, those who make this assertion subvert essence, and the formal cause: for it is necessary they should say that all things are accidental, and that there is not any thing which is essentially man or animal, and to which the being of man or animal belongs. For, if there should be such a thing as that which it is for a man to be, this will not be for a man not to be, or to be not a man; although these are negations of this. For that which is signified was one, and this was the essence of a certain thing. But to signify essence is the same as to assert that the being of a thing is nothing else. But, if the being of a man belongs to a thing, it is impossible that it should not be man, or that it should be that which is not man; for it would be something else. So that they must necessarily say that a formal and essential definition of this kind, and which is always adapted to the subject, is of a non-entity, and that all things pertain to it accidentally; for in this very
thing

thing * essence and accident are separated from each other. For, whiteness on that account happens to man, because he is indeed white, but not whiteness itself. But, if all things are predicated according to accident, there will not be any first universal. And if accident always signifies a predication pertaining to a certain subject, a progression *ad infinitum* must necessarily ensue. But this is impossible; for they are not connected with more than two. For accident is not an accident to accident, unless because both happen to the same thing. I say, for instance, as in that which is white, and a musician; for here the musician is white, because both happen to a man: but Socrates is not on that account a musician, because both happen to a certain other thing. Since, therefore, some things are called accidents in this, and some in that way, those things which are called accidental, in the same way as white to Socrates, cannot be predicated infinitely, so as, for instance, that to Socrates who is white something else should happen. For one thing is not produced from all, nor is any thing else an accident to that which is white, as, for instance, a musician; since this does not more happen to that than that to this. And at the same time we have distinguished with respect to accidents, that some things happen in this manner, but others as a musician to Socrates. Such things, however, as happen in this manner do not happen as accident to accident; but this is the case with such as happen after the other manner. So that all things are not asserted according to accident. There will, therefore, be something which signifies as essence: but if this be the case, it is shown that things contradictory cannot be predicated at the same time.

Again: if all contradictions are at the same time true of the same thing, it is evident that all things will be one. The same thing, therefore, will be a trireme, and a wall, and man, if it so happens that something can be affirmed or denied of every thing, as must necessarily be the case with those who speak according to the doctrine of Protagoras. For, if to any one a man appears not to be a trireme, it is evident that he will not be a trireme; he is, however, if contradiction be true. And hence, that which Anaxagoras asserted, takes place, viz. that all things subsist together, so that nothing is truly one thing. They appear, therefore, to assert that which is indefinite, and, thinking to speak of being, they speak concerning non-being: for that which is being in capacity, and not in energy, is the indefinite. Nevertheless, we must say to the authors of this hypothesis that, of every thing, either

* For *vous*, in this place, read *vous*.

affirmation.

affirmation or negation must be predicated. For it is indeed absurd that the negation of a thing should be true, but that the negations of other things which are different from it should not also be true. I say, for instance, if it be true to affirm of a man, that he is not man, it is evident that he is also not a trireme. If, therefore, affirmation is true respecting him, negation is also necessarily true. But, if affirmation is not true, the negation of a trireme will more pertain to him than the negation of himself. If, therefore, that be true, the negation of a trireme is also true; and if the negation, affirmation likewise. These things, therefore, happen to those who make this assertion, and also, that it is not necessary to employ either affirmation or negation. For, if it be true that the same person is a man and not a man, it is evident that he will neither be a man nor yet not a man: for of those two things there are two negations. And, if that is one composed from both, the one so composed will be opposite.

Further still: either this will be the case respecting all things, and a thing will be white and not white, being and not being, and in a similar manner with respect to other affirmations and negations; or this will not be the case, but it will be true of some things, and not of others. And, indeed, if it be not true with respect to all things, those will be firm and definite. But, if it be true with respect to all things, again, either of such things as there is affirmation there will also be negation, and of such things as there is negation there will be affirmation; or, of such things as there is affirmation there will also be negation; but of all such things as there is negation there will not be affirmation. And if this be the case, there will be something which is firmly non-being, and this will be a stable opinion. However, if not to be is something firm and known, the opposite affirmation will be more firm. But if it be necessary to affirm in a similar manner whatever is denied, it is either true to say, by dividing, that a thing is white, and again that it is not white, or it is not true. And, if it be not true to assert this by dividing, neither does he assert these things, nor has any thing a subsistence. But how can any one speak of non-entities, or understand any thing respecting them? And, as we before observed, all things will be one; and man, and god, and trireme, and the contradictories of these, will be the same. But if, in a similar manner, every contradiction is true of particulars, one thing will in no respect differ from another. For, if it should differ, this will be true, and its peculiarity. In like manner, that which we have asserted will take place, if it should

should happen that he who makes the division affirms that which is true. To which we may add that all men will speak the truth, and all men will assert that which is false, and every one will acknowledge that himself speaks falsely. At the same time, too, it is evident that such an one speculates a non-entity: for he says nothing. For he neither speaks in *this* manner, nor in *that*; but in *this* manner, and yet not in *this* manner. And, again, with respect to these, he makes a negation of both, by asserting that they are neither in this manner, neither not in this manner, but in this manner, and not in this manner: for, if this were not the case, there would now be something definite.

Further still: if when affirmation is true negation is false, and when this is true affirmation is false, it will not be possible at the same time truly to affirm and deny the same thing. But some one perhaps may say, this is that which was advanced in the beginning. Again, therefore, does he who apprehends that a thing either is, or is not, in a certain respect, think falsely; but he who apprehends that a thing is both, conceive truly? For, if his conception be true, what else is asserted but this, that such is the nature of things? But if his conception be not true, but rather the conception of him who thinks after that manner, then things will be in a certain respect, and this will be true, and not at the same time not true. But if all men in a similar manner speak falsely and truly, it is not possible for him who makes this assertion, either to speak or assert any thing: for, at the same time, he must assert the same things, and not the same. And if he apprehends nothing, but in a similar manner thinks and does not think, what difference will there be between such an one and a plant? Whence, also, it is sufficiently evident that no one is thus affected, neither of others, nor of those who make this assertion. For, why does he walk to Megara, and not remain quiet, thinking to walk? nor immediately at break of day proceed to some well, or to a precipice? But he appears to act cautiously, as not similarly thinking it is not good, and good, to fall. It is evident, therefore, that he apprehends that the one is better, and the other not better. But, if this be the case, it is also necessary he should think that *this* is a man, but *that* not a man; and that *this* thing is sweet, but *that* not sweet. For he does not equally investigate and form an opinion of all things, since he thinks it is better to drink water, and to see a certain person, and afterwards searches for these very things. Though it would be requisite that he should equally investigate all things, if man and

O

not

not man, water and not water*, were similarly the same. But, as we have before observed, there is no man who does not appear cautiously to avoid the one, and not the other. So that, as it seems, all men are persuaded, that both contraries are not expedient, if not with respect to all things, yet with respect to the better and the worse. But if they thus think, not from scientific knowledge, but opinion, much more should they be studious of truth, just as the sick should pay greater attention to health than those who are healthy. For he who energises according to opinion, when compared with him who energises according to science, is not sanely disposed with respect to truth.

Further still: though all things should especially subsist in this manner, and yet not in this manner, yet the more and the less are inherent in the nature of things. For we do not say that two things and three things are similarly even; nor does he similarly assert an untruth, who says, that four things are five, as he who affirms that a thousand things are five. If, therefore, not similarly, it is evident that one violates the truth less than the other, and therefore says that which is more true. If, therefore that which is more true is nearer to the truth, there will indeed be something true, to which that which is more true is nearer. And, although nothing should be true, yet at least, as it appears, there is something which is more firm and more true: and thus we shall be liberated from that intemperate assertion, which prevents us from defining any thing by our dianoëtic part.

CHAP. V.

THE doctrine of Protagoras originates also from the same opinion; and, in a similar manner, it is necessary that both these should either be, or should not be. For, if all things of which we form an opinion, and which appear to be, are true, it is necessary that all things, at the same time, should be both true and false. For many apprehend things contrary to each other, and think that those who do not entertain the same opinions with themselves are deceived. So that it is necessary that the same thing should both be and not be. And if this be the case, it is necessary that every thing which is the subject of opinion should be true: for, both those who assert that which is false, and those who speak the truth, opine things opposite to each

* *ἴδιον καὶ οὐκ ἴδιον* is omitted in the printed text, but appears necessary from the comment of Alexander Aphrodisiensis.

other.

other. If, therefore, things subsist in this manner, the assertions of all men will be true. That both these doctrines, therefore, originate from the same conceptions is evident. But the same mode of reply must not be adopted to all such; for some require persuasion, but others force: for the ignorance of those who think in this manner, in consequence of doubting, may be easily cured; since here the reply is not directed to their discourse, but to their dianoëtic part. But the cure of such as speak in this manner for the sake of disputation, is the confutation of that discourse which consists in voice, and of that which consists in names.

This opinion, however, in those that doubt, originated from sensibles; I mean, that contradictories and contraries subsist together; and this, in consequence of perceiving contraries generated from the same thing. If, therefore, it is impossible for that which is not, to be generated, a thing according to them will pre-exist as both contraries at once. Just as Anaxagoras and Democritus say that every thing was mingled in every thing. For Democritus also asserts that there is a vacuum and a plenum in every part, and that one of these is being and the other non-being. To those, therefore, who from these things form this opinion, we say that in one respect they speak rightly, and in another ignorantly. For being is predicated in a two-fold respect; so that it is partly possible for something to be generated from non-being, and partly not; and for the same thing to be at the same time being and non-being, yet not according to the same: for it is possible that contraries may at the same time be the same thing in capacity, but not in energy.

Further still: it is requisite they should consider *that there is another essence of things to which neither motion, nor corruption, nor, in short, generation belongs*. In a similar manner too, the truth respecting the phenomena was obtained by some from sensibles. However, they ought not to think it fit that truth should be judged either by multitude or paucity. But the same thing to the taste of some appears to be sweet, but to that of others bitter. So that if all men were diseased, or all men were insane, except two or three who were well, and in possession of intellect, these two or three might appear to be diseased and to be insane, but this would not be the case with the others.

Again: to many other animals, as well as to us, contraries appear to take place respecting the same things; and to each of us, with respect to himself, things do not always appear the same, according to sense. It is, therefore, immanifest which of these is true or false: for no one of these is more true

than the other, but, with respect to truth, they are similarly affected. Hence Democritus says that either nothing is true, or that it is to us immanifest. In short, because they are of opinion that prudence is sense, and that this is alteration, they say that whatever is sensibly apparent is necessarily true. For, from hence, Empedocles, Democritus, and, as I may say, each of the rest, became obnoxious to such like opinions. For Empedocles says, that in consequence of habit being changed, prudence also is changed.

“ Man’s counsel varies with the present time.”

And in another place he says,

“ Men, as their bodies change, in wisdom change *.”

Parmenides also speaks after the same manner: “ As is the temperament of the flexible members in every one, such also is the intellect which is present to men. For the nature of the members is entirely the same with that which energises *prudentially* † in all mankind. For that which is more than this is an intellectual conception.” Anaxagoras also is reported by some of his associates to have said that things were such to men, as they apprehended them to be. They say, too, that Homer appears to have been of this opinion, who affirms of Hector, when he was insane through a wound, “ that he was wise in an unusual manner ‡;” as if those that are insane were prudent, but not in the same manner as those that possess a sound mind. It is evident, therefore, that if both the mentally sane and the insane are wise, things also subsist in this manner, and yet not in this manner. But that which results from this conclusion is most grievous: for, if those who in the highest degree perceive that truth, which it is possible to perceive § (*but these are they who in*

* Empedocles doubtless meant to confine this assertion to the multitude, who are in possession of no higher *wisdom* than that of *opinion*.

† Parmenides too, I have no doubt, said this with a view to the multitude whose *prudence* is not of an *intellectual* nature, but is solely conversant with the good of the mere animal life. Hence he adds, That which is more than this, *i. e.* which is beyond this, is an *intellectual conception*.

‡ *Κεῖσθαι αλλοφροσύνην.*

§ If, therefore, according to Aristotle, Parmenides, and Empedocles, and, in short, the Pythagoreans and Plato, “ perceived in the *highest* degree that truth which it is possible to perceive,” it is plain that his objections to their doctrines are pretended, and not real.

the

the highest degree investigate and love truth), if these entertain such opinions, and assert such things respecting truth, must not those despond who endeavour to philosophise? For to investigate truth will be to pursue things volant. But this opinion was produced in them by speculating the truth of beings; and they apprehended that beings were alone things sensible. In these, however, much of the nature of the indefinite is inherent, and of that which is indefinitely being, as we have already observed. Hence they speak probably, but do not assert the truth; for thus it is more becoming to speak, than as Epicharmus speaks when writing against Xenophanes.

Further still: when they perceived that the whole of this visible nature was moved, and that nothing could be verified of that which is changed, they concluded that it was impossible to assert any thing with truth of that which is in every respect changed. For from this conception that opinion originated, which stands at the summit of those we have mentioned, viz. the opinion of those who profess to Heraclitize, and which was adopted by Cratylus, who at length thought that it was not proper to speak, but only moved his finger, and reproved Heraclitus for asserting that it was not possible to enter twice into the same river. For he thought it was not possible to do this once. But to this assertion we say, that to be of opinion that a thing which is changed is not when it changes, possesses some truth, although it is attended with ambiguity. For that which casts away, possesses something of that which it casts away; and of that which is in generation, or becoming to be, it is necessary that something should now be. In short, if it be corrupted, something will subsist; and if it be generated, it is necessary that the thing from which it is made, and by which it was generated, should subsist, and that this should not be the case *ad infinitum*. However, omitting these things, we say that it is not the same thing to be transmuted according to quantity and according to quality. Let it, therefore, be granted, that a thing does not abide according to quantity, yet we know that all things abide according to form.

Again: it is proper to reprove those who think in this manner, because, though they perceived this flux and mutation but in the smaller number of sensibles, yet they entertained similar opinions respecting all heaven. *For that with which we are surrounded, or the place of generation, alone* subsists in continual generation and corruption*; but this place, on account of its exi-

* According to Aristotle, the heavens and heavenly bodies are divine and perpetual. See on this subject his books *De Cælo*.

lity,

lity, is, as I may say, no part of the universe. So that it would have been more equitable to have drawn a conclusion from the greater number respecting the fewer, than to have condemned the former on account of the latter. Further still: it is evident that we may urge the same things against these men, as were formerly urged by us. For we must demonstrate, and persuade them, that there is a certain immoveable nature; though it happens to those who assert that a thing is and is not at the same time, that they must rather say that all things are at rest than in motion. For, on this hypothesis, there will not be any thing into which a thing may be changed; for all things will subsist in all.

But, with respect to truth, we must evince that not every thing which is apparent is true. For, in the first place, it does not follow, that, if sense is not deceived in the proper objects of its perception, this is also true of the phantasy; for phantasy is not the same with sense. In the next place, it is worthy of admiration, if they doubt whether magnitudes are so great and colours such as they appear to those who are at a distance, or so great and such as they appear to those who are near; and whether they are such as they appear to those in health, or such as they appear to the diseased: and with respect to weight, whether those things are heavier which are judged to be so by the weak, or those which appear to be so to the strong; and lastly, with respect to truth, whether such things are true as appear to those who are asleep, or such as appear to those who are awake: for it is evident they do not think that things are such as they appear to the former of these. For no one, if when in Libya he should dream that he was at Athens, would when he awoke go to the Odeon*. Further still: with respect to the future, as Plato also observes†, the opinion of a physician and one unskilled in medicine is not similarly certain, as to one who hereafter will or will not be well.

Again: with respect to the senses themselves, the perception of a *foreign* is not equally certain with that of a *proper* object, nor of that which is remote with that which is near. But with respect to colour, the sight judges, and not the taste; and of juices the taste, and not the sight; none of which senses affirms that any circumstance subsists in a particular manner, and yet does not

* The *Odeon*, says Alexander, is a certain part of the theatre at Athens, which is now called *Θυμειον*, or the *Scene*.

† In his *Protagoras*.

so subsist, at the *same* time, about the *same* thing. But neither do the senses doubt respecting things to which they are passive, at a different time, but respecting that to which the passion happens. I say, for instance, the same wine may to the same person at one time appear to be sweet, and at another time not sweet, either because the wine itself is changed, or the organ of taste. But that which is sweet, when it is so, is never changed, but sweetness is always truly affirmed of it: and that which will be sweet, necessarily subsists in this manner, though this conclusion is subverted by all these assertions. For, as they affirm that there is no essence of any thing, they also take away the necessary subsistence of any thing. For that which is necessary does not admit of a various subsistence. So that, if any thing subsists from necessity, it will not subsist thus, and yet not thus. And, in short, if that which is sensible alone subsists, nothing will be, if animated natures have no existence; for sense will not be. And if sense is not, it is perhaps true that there are no such things as *sensible* objects, nor perceptions of sense; for sense is a passion of a sentient nature. But that the *subjects* themselves should not subsist which produce sense, even though sense were not, is impossible. For sense itself is not of itself; but there is something else besides sense, which necessarily is prior to sense. For that which moves is by nature prior to that which is moved; nor will this be less the case, though these same things are referred to each other.

CHAP. VI.

THERE are some, however, who doubt, both among those who are persuaded of the truth of these assertions, and among those who are alone the authors of such assertions. For they inquire who it is that judges of a man in health, and, in short, who it is that judges rightly respecting every particular. Doubts of this kind are, however, similar to the doubt whether we now sleep, or are awake: for all such doubts as these amount to the same thing. For the authors of them think fit to investigate the reason and cause of all things; since they explore the principle, and expect to obtain it through demonstration. However, that they are not persuaded is evident from their actions: but, as we have said, this is the error of these men; for they investigate the principle of things of which there is no principle. For the principle of demonstration is not demonstration. These men, therefore, may easily

easily be persuaded of this; for it is not difficult to apprehend. But those who alone investigate force in words, investigate that which is impossible: for, at the same time, they directly assert things contrary, deeming it fit to affirm the contrary. However, if all things are not relatives, but some subsist themselves by themselves, every thing which appears will not be true: for every thing which appears is apparent to some one. So that he who asserts that all appearances are true, makes all beings to be relatives. On which account it is requisite to observe to those who search for force in argument, and with this view engage in disputation, that not that which appears is true*, but, it should be added, that it is true to him to whom it appears to be so, and when it appears, and so far as it appears, and according to the manner in which it appears. But if they dispute, indeed, yet not in this way, it happens that they rapidly assert things contrary. For the same thing may indeed to the sight appear to be honey, but not to the taste: and, as we have two eyes, if they happen to be dissimilar, the same things will not appear to be the same to each sight. As to those who, for the reasons formerly adduced, contend for the truth of that which appears, and on this account affirm that all things are similarly false and true, it is easy to reply, that neither do the same things appear to all men, nor do the same things always appear the same to the same person, but frequently contraries appear at the same time. For that which appears to the sight to be one, to the touch appears to be many, when different fingers are placed on it in succession. Nor yet do the same things appear to the same sense, and according to the same, and in a similar manner, and in the same time. So that this will be true. But, perhaps in consequence of this, it is necessary to say to those who speak, not through doubting, but for the sake of discourse, that this is not simply true, but true to this or that person. And, as it was before observed, it is necessary to make all things relatives, and refer them to opinion and sense; so that neither was any thing, nor will there be any thing, if there were no antecedent opinion of things. But if there was, or will be any thing, it is evident that all things will not be referred to opinion.

Again: if a thing has a relative subsistence, it is either predicated as one to one, or with relation to that which is definite; and if the same thing is both half and equal, it is referred to these, but the equal is not referred to the double. And with respect to opinion, if man is the same with that which is the object

* *Αληθές* is omitted in the text.

of

of opinion, that which opines is not man, but that which is the object of opinion. But, if every thing subsists with relation to that which opines, that which opines will be infinite in species. That the opinion, therefore, is the most firm of all things, viz. that opposite assertions are not at the same time true, and what happens to those who contend that they are true, and why they speak in this manner, has been sufficiently shown by us. But, since it is impossible that contradiction should at the same time be true respecting the same thing, it is evident that neither can contraries subsist at the same time in the same thing. For the other of contraries is no less privation: but the privation of essence is a negation from a certain definite genus. If, therefore, that it is impossible at the same time to affirm and deny is true, it is also impossible that contraries can at the same time be inherent in a subject; but either both must be inherent partially, or the one partially and the other simply.

C H A P. VII.

BUT neither is it possible that any thing can subsist between contradictories; for it is necessary either to affirm or deny one thing of every thing which is one. This, however, will be manifest, by first of all defining what the true is, and what the false. For to say that being is not, or that that which is not is, is false: but to affirm that being is, and that non-being is not, is true. So that he who asserts that this medium is or is not, asserts that which is true, or that which is false; but he neither asserts of being, nor of non-being, that it is not or is. Again, if there is something between contradictories, it will either be, as is a dark colour between black and white, or as that which is neither man nor horse, between man and horse. If, therefore, it subsists in this manner, it will not be changed: for it will either be changed from that which is not good into good, or from this into not good. But now it always appears to take place: for there is no mutation except to things opposite, and those which subsist between. But if there be a medium, thus also there will be some mutation or generation into white, not from that which is not white. But this does not appear to be the case.

Further still: the dianoëtic power of the soul either affirms or denies every thing dianoëtic and intelligible. But this is evident from definition, when it asserts that which is true, or that which is false: for, when it composes in *this* particular manner, affirming or denying, it asserts the truth; but when in *that*,

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it asserts that which is false. Besides, this medium ought to be in all contradictions, unless it is introduced for the sake of argument. So that neither will any one assert that which is true, nor yet that which is not true: and there will be something * besides being and non-being. Hence there will be a certain mutation besides generation and corruption. Further still: this medium will also be in those genera, in which negation introduces its contrary. As, for instance, in numbers there will be that which is neither an even nor an odd number; but that this is impossible, is evident from definition. Again: there will be a progression to infinity, and beings will not only be sesquialter, but even more than this: for, again, something will be found, of which it will be possible to deny the affirmation and negation of the medium of the former contradiction: for the essence of it will be something else.

Further still: when any one, being asked if a thing is white, says it is not, he denies nothing else than being; but not to be is negation. But this originated from the same source as the other paradoxical opinions: for some, when they are not able to solve the contentious arguments, yielding to reason, they say that the syllogistic conclusion is true. Some, therefore, speak in this manner through this cause; but others, because they investigate the reason of all things. But the principle to all these is to be assumed from definition; and definition is produced in consequence of its being necessary that they should signify something: for a sentence, the name of which is a sign or signification, is the definition of a thing. The doctrine of Heraclitus, indeed, when he asserts that all things both are and are not, seems to make all things true. But Anaxagoras, when he asserts that there is a certain medium in contradictions, makes all things to be false. For, when they are mingled, the mixture is neither good, nor yet not good; so that it is not possible to speak truly of any thing.

C H A P. VIII.

THESE things being determined, it is evident that things which are predicated in one way only, and also that those which are predicated of all things, cannot subsist as some say they subsist. For some assert that nothing is true: for, say they, nothing hinders but that all things may subsist in such a manner, as that the diameter of a square may be commensurable with its

* T₁ is omitted in the printed text.

side.

side. But, according to others, all things are true. For their assertions are nearly the same as those of Heraclitus; since he who says that all things are true, and that all things are false, separately makes each of those assertions: so that if those are impossible, these also must be impossible.

Further still: it is evident that they are contradictions, which cannot possibly be at the same time true, or at the same time false, though, from what has been said, it would rather appear that both are false*. But in all such assertions it is necessary to require, as we have before observed, not that a thing should be, or should not be, but that it should signify something; so that we must dispute from definition, by assuming what the true or the false signifies. But, if the true is nothing else than to say that a thing which thus subsists, does thus subsist, and the false is nothing else than to deny that a thing subsists in a certain manner, when it does thus subsist, it is impossible that all things should be false: for it is necessary that the other part of the contradiction should be true. Further still: if affirmation or negation must necessarily take place respecting every thing, it is impossible that both should be false: for the other part of the contradiction is false. But the common saying applies to all such assertions as these, viz. that they subvert themselves. For he who says that all things are true, makes also the contrary assertion true; so that he makes his own assertion not to be true. For the contrary assertion says that it is not true. But he who says that all things are false, says also that his own assertion is false. But, if they make an exception, the one of the contrary assertion as alone not true, but the other of his own as alone not false, nevertheless it happens that they must demand infinite true and false assertions. For he who says that a true assertion is true, assents to this, that it is true; but this will proceed to infinity†. It is, however,

* *Ἀμφοτέρω ψευδὴ εἶναι* should be added in this place, as is evident from the text of Alexander.

† What Aristotle, with his usual pregnant brevity, asserts in this place, appears to be as follows:—If the dogma of those be admitted who assert that all things are true, not that assertion alone will be false, that not all things are true, but that also which *affirms it to be true* that not all things are true, which is different from that which simply says that not all things are true. Nor will this alone be false, but that also which affirms it is true to assert that the assertion is true which says it is true that not all things are true, which, nevertheless, is different from the former; and so, by the addition of the true, it may be demonstrated, by him who says that one assertion alone is false, that there are infinite false assertions.

But there may be a composition of truths of this kind to infinity. Thus, on the hypothesis that

ever, evident, that neither those who say that all things are quiescent assert the truth; nor those who say that all things are in motion *. For, if all things are at rest, the same things will always be true and false: but this appears to be changed. For he who says this, once was not, and again will not be. But if all things are moved, nothing will be true. All things, therefore, will be false: but it has been demonstrated that this is impossible. Again: it is necessary that being should be changed: for mutation is from something into something. But neither are all things sometimes at rest and sometimes in motion; so that there is not that which is always moved, and that which is always immoveable. For there is something which always moves things that are moved; and the first mover is itself immoveable.

that the assertion is true that all things are true, it follows that the assertion is false that not every assertion is true. Likewise, if all things are true, the assertion is true that not all things are true. Also this is false: it is true to say that the assertion is true, that it is true to say that not all things are true; and this will take place *ad infinitum*. In like manner, on the hypothesis that all assertions are false, there will be infinite true assertions, *that, being excepted, which says that all assertions are false*. For thus, not only that assertion will be true that all assertions are false, but also that which affirms it to be true to say that all are false. For, unless this is true, that will not be true which preceded this; but also that would be true, that the assertion is true which affirms it to be true that all things are false; and this will be the case infinitely.

* According to Alexander, these words, "It is, however, evident, that neither those who say that all things are quiescent assert the truth, nor those who say that all things are in motion," are not found in some copies, because, says he, they seem to belong to *Physics*. However, he adds, they do not appear to be altogether foreign from the purpose: for if it is admitted, that neither all things are true, nor all things false, it follows, that neither those who say that all things are quiescent assert the truth, nor those who say that all things are moved.

ARISTOTLE'S

ARISTOTLE'S METAPHYSICS.

B O O K V*.

C H A P. I.

WITH respect to principle, one kind is said to be that whence something is first moved ; as, for instance, the principle of length, and of a way ; for the principle is from hence. On the contrary, another principle is that whence any thing becomes the best ; as, for instance, with respect to discipline, we must sometimes begin, not from the first, and the principle of a thing, but whence learning may be most easily acquired. Another principle is that whence, from being inherent, a thing is first produced ; as of a ship the keel, of a house the foundation ; and of animals, according to some the heart, according to others the brain, and according to others something else of this kind. But another principle is that whence, not being inherent, a thing is first produced, and whence motion and mutation are first naturally adapted to originate ; as an offspring from father and mother, and war from defamation.

* Aristotle has before informed us that it is the business of the first philosopher to consider being universally, and those things which belong to beings in common. But things common to being so far as being, are such as all disciplines employ. Hence they are discussed in the present book. Let it be remembered too, that what vulgar dialectic infers by reasoning from probabilities, the first philosophy concludes scientifically.

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Another principle is that according to the free-will of which things in motion are moved, and mutable natures are changed, as principalities, dynasties, kingdoms, and tyrannies in a city. Arts also are called principles; and of these especially the master building arts. Further still: that whence a thing is first known, is said to be the principle of that thing; as, for instance, hypotheses of demonstrations. Causes too, are denominated, in as many ways as principles; for all causes are principles. It is common, therefore, to every principle to be the first whence a thing is either produced or known. But, of these, some have an internal, but others an external subsistence. Hence nature is a principle, as is also an element, the dianoëtic power, free-will, essence, and that for the sake of which a thing subsists. For good and the beautiful * are to many things the principle both of knowledge and motion.

C H A P. II.

CAUSE, in one respect, is said to be that from which, when inherent, any thing is produced, as, for instance, brass of a statue, silver of a bowl, and the kinds of these. In another respect, form and paradigm are causes; but in this case they are formal causes, and the kinds of these. Thus, for instance, the ratio of two to one, is the cause of the diapason: and, in short, number, and the parts in a ratio, belong to this order of cause. Further still: cause is that whence the first principle of mutation or rest originates: thus, for instance, he who consults is a cause, and a father of his offspring; and, in short, he who makes of that which is made; and that which has the power of changing of that which is changed.

Again: cause is as the end. But this ranks as that for the sake of which other things subsist; as, for instance, health of walking. For, on what account does a man walk? We say, That he may obtain health: and, thus saying, we think that we have assigned the cause. Such things also are causes, as subsist between another thing which moves, and the end. Thus, for instance, the cause of health is either attenuation, or purgation, or medicine, or instruments. For all these are for the sake of the end. But they differ

* In the printed text it is *το κακον*, *the evil*; but it appears from the comment of Alexander, that we should read *το καλον*, *the beautiful*. Indeed, it appears that *το κακον* was found in some copies in Alexander's time; but I prefer *το καλον*

from

from each other in this, that some of them are as instruments, but others as works. Causes, therefore, are nearly denominated in so many ways. But, since causes are predicated multifariously, it happens that there are many causes of the same thing, not according to accident; as, of a statue, both the statuary's art, and the brass, and this, not from any thing else, but so far as it is a statue: yet this does not take place after the same manner, but the brass is as matter, and art as that whence motion originates. Some things also are mutually causes with respect to each other; as labor is the cause of a good habit of body, and a good habit of body, of labor; not, however, after the same manner, but the one is as the end, and the other as the principle, of motion.

Further still: the same thing is sometimes the cause of contraries: for that which when present is the cause of some particular thing, the same when absent, is, we say, sometimes the cause of the contrary. Thus, the absence of the pilot is the cause of the destruction of the ship, whose presence was the cause of its preservation. But both the presence and the absence of the pilot are as moving causes. All the causes, however, that we have now enumerated fall into four most manifest modes. For the elements of syllables, and the matter of things fashioned by art, also fire and earth, and every thing else of this kind belonging to bodies, together with the parts of a whole, and the hypotheses of a conclusion, are causes, as things *from which* others are produced. But of these, some are as a subject, as, for instance, parts; but others, as the formal cause, such as the whole, composition, and form. But feed, the physician, he who consults, and, in short, the maker of any thing, are all of them causes, whence the principle of mutation or stability originates; but the rest are as the end, and the good of other things. For that for the sake of which other things subsist, wills to be the best, and the end of others. But there is no difference, whether it be called real or apparent good. There are, therefore so many species of causes. But the modes of causes are many in number. They may, however, be summed up into a less numerous multitude: for causes are predicated in a manifold respect; and of those which are of the same species, one is prior and another posterior; as, for instance, of health, the physician, and the artificer; and, of the diapason, the double, and number; and always those things which comprehend any thing of particulars.

Further still: cause is predicated as accident, and the genera of these; as,
for

for instance, of a statue, Polycletus is in one respect the cause, and in another respect the statuary, because it happens to the statuary to be Polycletus: and things which comprehend accident; as man is the cause of a statue, or in short animal, because Polycletus is a man, and man is an animal. Of accidents also, one is more remote and more proximate than another; as, for instance, if that which is white, and a musician, should be said to be the cause of a statue, and not only Polycletus, or a man. But, besides all those which are properly predicated, and those which are predicated according to accident, some causes are denominated as endued with capacity, but others as energetic: thus the builder is the cause of erecting the house, or the builder considered as building. The like takes place also in effects; as, for instance, of this statue, or of a statue simply, or in short of an image; or of this brass, or brass simply, or universally of matter: and in a similar manner with respect to accidents. Further still; both these and those are predicated conjointly; as, for instance, not Polycletus, nor the statuary, but Polycletus the statuary. At the same time, all these with respect to multitude are six; but they are predicated in a twofold respect: for they are predicated either as that which is particular, or as genus, or as accident, or as the genus of accident, or as these conjoined, or according to capacity, or simply considered, or, lastly, as energising. But they so far differ, that causes in energy, particulars, and those things of which they are the causes, subsist together and together cease to be; as, for instance, this physician with this convalescent, and this builder with this building. But this is not always the case with causes in capacity: for the house and the builder are not corrupted together.

C H A P. III.

ELEMENT is said to be that from which, being primarily inherent and indivisible in species, something is composed. Thus, for instance, the elements of speech are those things from which speech is composed, and into which it is ultimately divided: but these elements are no longer divided into other words different from themselves in species; but, if it were possible for them to be divided, the parts would be of a similar species. Thus the parts of water are water, but the parts of a syllable are not syllables. In like manner the antients called those the elements of bodies, into which bodies themselves are ultimately divided, but which are no longer divisible into other bodies specifically different:

different: and whether there is one, or many of this kind, they call these elements. The elements of diagrams and demonstrations are denominated in a similar manner. For first demonstrations, and those which are inherent in many demonstrations, are said to be the elements of demonstrations. But such as these are first syllogisms composed of three terms through one medium. Hence also, metaphorically speaking, they call that an element, which, being one and small, is useful for many purposes. On which account, the simple, the small, and the indivisible, are said to be elements. Hence it comes to pass that things eminently universal are elements; because each of them being one and simple, it is inherent in many things, or in all things, or in the greater part of all things. *The one* also and a point to some appear to be principles. Since, therefore, those things which are called genera are universals and indivisibles (for there is one definition of them), some denominate genera themselves elements, and more so than difference, because genus is more universal. For genus follows that to which difference is present; but that to which genus is present is not always attended with difference. But it is common to all things, for that to be the element of any thing, which first subsists in that thing.

C H A P. IV.

NATURE, in one respect, is said to be the generation of things rising into being; as if any one, extending his voice, should pronounce the letter *u*. But, in another respect, that from which, when primarily inexistent *, that which is generated is generated. Further still: nature is that whence the first motion arises†, in each of the things which subsist naturally, so far as a thing is that which it is. But things are said to be rising into being, which receive increase through another thing by contact, or being connascent with it; as embryos. The being connascent, however, differs from contact: for in the latter nothing besides contact is necessary; but in things connascent, there is a certain one the same in both, which makes them grow together, instead of merely touching each other, and causes them to be one according to continuity and quantity, but not according to quality. Again: Nature is said to be

* *i. e.* The subject and matter of a thing have the relation of nature.

† *i. e.* Natural form.

Q

that

that from the power of which, when it is primarily inordinate* and immutable, something of natural productions either is, or is generated: as brass is said to be the nature of a statue, and of brazen furniture; wood, of such things as are wooden; and in a similar manner with respect to other things. For each is from these, the first matter remaining unchanged: for, after this manner, they say that the elements of things which subsist naturally, are nature; some asserting that this is fire, others that it is earth, others that it is air, others again, that is water, and others that it is something else of this kind. There are also those who assert that nature is some of these; and there are others who contend that it is all these.

Further still: in another respect, nature is said to be the essence of things which subsist naturally; and in this sense it is understood by those who assert that nature is the first composition, and by Empedocles, when he says that there is not any nature of beings, but that there is a mixture alone, and permutation of things mingled, and that this mingling is denominated nature by men. So that such things, as either are, or are generated by nature (that already subsisting from which they are naturally adapted to be generated, or to be), are not yet said by us to possess nature, unless they have species and form. Hence that subsists from nature which is composed from both these, such as animals, and the parts of animals. But nature is the first matter; and this in a twofold respect: for it is either that which is first with relation to a thing, or that which is simply the first. Thus, for instance, of brazen works, the brass is first with respect to those works; but water perhaps is simply the first, if every thing which is capable of being liquefied is water. Also form and essence: but form is the end of generation. Hence, by a metaphor, every essence, in short, is called nature, because nature is a certain essence. From what has been said, therefore, the first nature, and that which is properly so denominated, is the essence of those things which possess in themselves the principle of motion, so far as they are such things. For matter, from being the recipient of this, is called nature. Generations also, and to be born, are called nature, because motions are from these. Nature also is the principle of the motion of things which have a natural subsistence, this principle being in a certain respect inherent either in capacity or energy.

* *i.e.* The proximate matter of a thing.

CHAP. V.

THAT is called NECESSARY, without which as a concause it is not possible to live. Thus, for instance, respiration and nutriment are necessary to an animal: for it is impossible that an animal can subsist without these. Also that is necessary, without which good cannot either be, or be produced, or a certain evil repelled and exterminated. Thus, to drink a medical potion is necessary to the prevention of disease; and to sail to Ægina, to receive a sum of money. To the necessary also belong the violent and violence. But this is that which opposes and impedes contrary to impulse and free-will. For the violent is called necessary; on which account it is painful; as Evenus also says—“*For every thing necessary is grievous.*” And violence is a certain necessity, as Sophocles also asserts—

“ But thus I act, by violence compelled.”

Indeed, necessity very properly seems to be something which cannot be persuaded: for it is contrary to the motion of free-will, and to the motion of the reasoning power.

Again: we say that a thing is necessarily so, which cannot subsist in any other manner: and, according to this acceptation of the necessary, every thing else which is necessary, in a certain respect, derives its appellation. For the violent is called necessary, because he who is under the influence of violence cannot either act or suffer from impulse, on account of a compelling power; that being as it were necessary, through which a thing cannot subsist in any other manner. The like also takes place in the concauses of living and good. For, when it is not possible, either to obtain good, or to live without certain things, then those things are necessary, and this cause is a certain necessity. Further still: demonstration is of things necessary, because that which is demonstrated, if it is simply demonstrated, cannot have a different subsistence. But the causes of this, are things first, which cannot subsist in any other manner, and from which the demonstrative syllogism is composed. Some things, therefore, are necessary from a cause different from themselves; but others are necessary from no cause, since other things subsist from necessity through these: so that the first and proper necessary is that which is simple: for this cannot have a manifold subsistence; and therefore cannot subsist variously. For, if this were admitted, it would subsist manifoldly. If, therefore, there are certain eternal and immoveable natures, there is nothing in them violent, nothing contrary to nature.

Q 2

CHAP.

C H A P. VI.

ONE, is partly denominated according to accident, and partly essentially. According to accident, indeed, as Coriscus and a musician, and Coriscus the musician. For it is the same thing to say that Coriscus and the musician are one, as to say, Coriscus the musician : also to say, the musician and the just, and the just musician Coriscus. For all these are called one, according to accident : the just, indeed, and the musician, because they happen to belong to one essence ; but the musician and Coriscus, because the one happens to the other. In like manner, too, in a certain respect, the musician-Coriscus is one with Coriscus ; because in this sentence, one part of the whole sentence happens to the other ; as, for instance, the musician to Coriscus, and the musician Coriscus to the just Coriscus, because no one part of each happens to the same one. For there is no difference whether the musician happens to Coriscus, or Coriscus the just to the musician Coriscus. In a similar manner, *one* will be denominated according to accident, though it should be predicated of genus, or some one of universal appellations ; as if, for instance man, and man the musician should be said to be the same. For these are one, either because to man who is one essence, the being a musician is accidental, or because both happen to some one among the number of particulars, as, for instance, to Coriscus. Yet both are not inherent after the same manner, but the one perhaps as genus and as in essence, but the other as habit, or the participated property of essence. Such things, therefore, as are called one according to accident, are after this manner so denominated.

But of things which are denominated one essentially, some are so called from their continuity, as a faggot, which is held together by a bond, and pieces of wood by glue. A line also, though it be curved, if it possesses continuity, is called one ; as likewise each of the parts of the body, such as a leg and an arm. But of these, those things are more one, which are continuous by nature, than those which are continuous by art. But that is called continuous, the motion of which is essentially one*, and which cannot be otherwise. And the motion is one which is indivisible, and indivisible according to time. But those things are essentially continuous which are not one.

* Viz. The whole of which is moved at once ; one part not being quiescent while another part is moved.

by

by contact. For, if you place pieces of wood so as to touch each other, you will not say that these are one piece of wood, nor one body, nor any thing else continuous. In short, therefore, those things which are continuous are called one, although they may be curved, and still more such things as do not possess curvature. Thus the leg or the thigh is more one than the leg and foot together, because it is possible that there may not be one motion of the leg and foot. And a straight is more one than a curved line. But we say that a line which is curved, and has an angle, is both one and not one, because it is possible that a part of it may be moved, without the whole being at the same time moved. But of a right line, a part and the whole are always moved together; and it is not possible that one part of such a magnitude should be at rest, while another part is moved.

Further still: after another manner a thing is said to be one, viz. from having its subject indifferent with respect to form. But the subject of those things is indifferent, the form of which is indivisible* according to sense. And the subject is either the first or the last. For wine is called one, and water one, so far as each is indivisible according to form. And all liquors are called one, as oil, wine, and such things as are fusible, because the ultimate subject of all these is the same; for all these are water and air. Those things also are called one, the genus of which is one differing by opposite differences. And all these are called one, because the genus is one which is the subject of the differences. Thus, for instance, horse, man, and dog, are one certain thing, because all of them are animals, and after a certain similar manner one†, as is the case with things of which the matter is one. But these things are at one time thus called one, but another time they are called the same, from the superior genus, when they are not the proximate, but the last species of genus. Thus the isosceles and equilateral triangle possess one and the same figure, because both are triangles, but not the same triangles. Again: those things are called one, the definition of one of which is indivisible with respect to the definition of another: for every definition is itself essentially divisible. Thus, that which is increased, and that which is diminished, are one, because the definition is one: just as of superficies which have length and breadth, the definition of the form is one. In short, those things are especially one, the intellectual apprehension of the form of which is indivisible, and which can

* *i. e.* Which is not cut into different sensibles.

† *E* is omitted in the text.

neither

neither be separated by time, nor place, nor definition. For, universally, such things as have not division, so far as they have not, are called one. Thus, for instance, if man, so far as man, is without division, man is one; and if animal, so far as animal, is indivisible, animal is one: but if magnitude, so far as magnitude, is indivisible, magnitude is one. Most things, therefore, are called one, because they either effect, or possess, or suffer some other one thing. But those things are primarily called one, of which the essence is one, and which are one either by continuity, or species, or definition. For we numerate as many, either those things which are without continuity, or those things of which the form is not one.

Again: we sometimes say that a thing is one by continuity, if it possesses quantity, and is continuous; and we sometimes say that a thing is not one, when it is not a certain whole, that is, if it has not one form. For we do not similarly say there is one, when we see the parts of a shoe placed any how together, although there may be continuity; but when it is so continuous, as to be a shoe, and to possess a certain form, then it is one. Hence, a circular line is more than all other lines one, because it is a whole and perfect. But the very essence of *the one* consists in this, that it is the principle of number. For the first measure is the principle of every genus; and that by which we first know a thing is the first measure of every genus. The principle, therefore, of that which is knowable, is in every genus *the one*. But there is not the same one in all genera. For here it is diesis*, but there a vowel, or a mute. Moreover, of gravity there is one principle, and of motion another. But every where *the one* is indivisible, either in species or in quantity. Of those things, therefore, which are indivisible according to quantity, and so far as quantity, that which is every way indivisible and without position is called the monad: but that which is every way indivisible, and has position, is a point. That which is only divisible one way is a line; that which is capable of a two-fold division is a superficies; and that which is every way and triply divisible according to quantity, is a body. And, conversely, that which is divisible in a twofold respect is a superficies; that which is divisible only one way is a line; and that which is every way divisible is a body. But that which is no way divisible according to quantity is a point and the monad; without position, indeed, the monad; but with posi-

* *i. e.* The least sensible interval in music.

tion,

tion, the point. Again: some things are one according to number, others according to species, others according to genus, and others according to analogy. Those things, indeed, are one according to number, of which the matter is one; but according to species, of which the definition is one; and according to genus, of which there is the same figure of predication*; but things are one according to analogy, which subsist as one thing with relation to another. The posterior, however, always follow the anterior. Thus, for instance, such things as are one in number, are also one in species; but such things as are one in species†, are not all of them one in number: but all things that are one in species, are also one in genus. Such things, however, as are one in genus, are not all of them one in species, but are one according to analogy. But such things as are one according to analogy, are not all of them one according to genus. It is, however, evident; that *the many* is predicated in a manner contrary to *the one*. For some things are called many from not being continuous; some things from possessing matter, divisible according to species, such matter being either the first or the last; and some from possessing many of those reasons which declare the essence of a thing.

C H A P. VII.

BEING is distributed into the accidental and the essential. Into the accidental indeed, as when we say that a just man is a musician, and, in a similar manner, the musician is a man. Thus too, we say that the musician builds, because it happens that the builder is a musician, or that the musician is a builder. For, to affirm *this* thing to be *that*, signifies that *this* thing happens to *that*. Hence, with respect to what has been asserted, when we say that man is a musician, and a musician man, or that something white is a musician, or a musician white, we say *this*, because both happen to the same thing, but *that* because it happens to being. But we say that a musician is a man, because the being a musician is accidental to him. In like manner, something white is said to be a man, because that is a man to which the being white is accidental. Things, therefore, which are said to be according to accident, are said to be after this manner, either because both are inherent in

* *i. e.* Of which one supreme genus and one predicament are predicated.

† Thus the letter *a* is one in species in the syllables *ba*, *ca*, *da*, &c. but is not one in number.

the

the same thing, or because the predicate is present to the subject, or because it is the thing itself to which accident is present, of which the thing itself is predicated.

But things are said to subsist essentially, which signify the figures of predication*. For, as often as they are predicated, so often do they signify being. Since, therefore, of things predicated, some signify the essence of a thing, others the quality, others the quantity, some the relation, others the action or passion, others the situation, and others the time, being signifies the same to each of these. For it is the same thing, to say the man *is* convalescent, as to say the man convalesces, and the man *is* walking, or *is* cutting, as the man walks or cuts. And in a similar manner with respect to other things.

Again: the words *to be* and *it is*, signify that a thing is true; but the words *not to be*, that it is not true, but false. In like manner with respect to affirmation and negation. Thus, he who says that Socrates *is* a musician, says that he *is*, because this is *true*; or asserts that Socrates *is not* white, asserts this because it is *true*: but he who says that the diameter of a square *is not* incommensurable with its side, says this because it is false. Further still: *to be* and *being* partly signify that which is in capacity, and partly that which is in energy. Thus we say that both he who is endued with sight in capacity sees, and he who possesses it in energy. And, in like manner with respect to scientific knowledge, we say that both he is endued with science who is able to use it, and he who does use it: and that, both a thing which is now at rest, and a thing which is capable of being at rest, are quiescent. We are also accustomed to speak in a similar manner with respect to essences. For we say that Mercury is in the stone, and we speak of the half of the line in capacity†, and call that corn which is not yet ripe. But when a thing is possible, and when it is not so, must be elsewhere determined.

CHAP. VIII.

WITH respect to ESSENCE, simple bodies, such as earth, fire, water, and the like, are called essences; and, in short, bodies, together with animals and dæmoniacal natures consisting from these, and the parts of these, are thus de-

* By the figures of predication, Aristotle means the ten predicaments.

† *Εν δυναμει* is not in the text, but without doubt ought to have been.

nominated. But all these are called essences, because they are not predicated of a subject, but other things are predicated of these. After another manner, too, that is called essence which is the cause of being, and which is inherent in such things as are not predicated of a subject, such as soul in an animal. Further still: such parts as are inherent in things of this kind, defining and signifying a certain sensible thing, and which being taken away, the whole is also taken away. Thus, if superficies is taken away, body also, according to some, is destroyed; and superficies is destroyed, by taking away line. And, in short, to some number appears to be a thing of this kind; for, according to them, nothing can subsist if it is taken away, and it is that which bounds all things. Again: the formal cause, of which definition is the reason, is called the essence of any thing. But it happens that essence is predicated according to two modes, viz. according to the ultimate subject, which is no longer predicated of another thing, and according to that which is a certain definite particular, and is separable: but of this latter kind are the form and species of every thing.

C H A P. IX.

OF things which are said to be THE SAME, some are so denominated according to accident, but others essentially*. Thus that which is white and the musician are the same, because they happen to the same thing; and man and musician are the same, because the one happens to the other, viz. the being a musician happens to man. But *this* is the same with either, and either of these is the same with *this*. For man and the musician are the same as man the musician; and *this* is the same with *those*. Hence all these are not predicated universally. For it is not true, to say that every man and a musician are the same: for universals subsist essentially, but accidents have not an essential subsistence, but are simply predicated of particulars. Thus Socrates and Socrates the musician appear to be the same. For Socrates is not predicated of many things. Hence we do not say every Socrates, as we say every man. Some things, therefore, are after this manner said to be the same according to accident.

But some things are said to be the same essentially, in the same manner as things which are essentially one. For things of which the matter is one, either in species or number, are said to be the same: and also things of which

* *Ta de kal' autra* is omitted in the text, but doubtless ought to be inserted.

the essence is one. So that it is evident that sameness is a certain unity of essence, either of many things, or when any thing is considered as many, as when any one says that a thing is the same with itself; for then he considers that thing as two.

But things are called different, of which either the species, or the matter, or definition of the essence is many: and, in short, *different* is predicated in a manner opposite to *same*. But things are said to be different which are diverse and yet in a certain respect the same, with this exception alone, that they are not the same in number, but either in species, or genus, or analogy. Again: those things are different, of which the genus is different, also things contrary, and such things as possess diversity in their essence.

Things are said to be similar which are passive to the same thing*, and which are passive to a greater number of things same than different; and also of which the quality is one. That also which possesses more, or the principal of those contraries by which another thing may be altered, is similar to that thing. But dissimilars are predicated in a manner opposite to similars.

C H A P. X.

OPPOSITES are contradictories, contraries, relatives, privation, and habit, and those things from which such things as are last originate, and into which they are resolved; such, for instance, as generations and corruptions: likewise things which cannot be at the same time present to that which is the receptacle of both;—these things are either themselves said to be opposed, or the natures from which they consist. For a dark and a white colour cannot be present at the same time to the same thing; and hence the things from which these colours consist are opposed to these.

Those things are called contraries which, differing in genus from each other, cannot at the same time be present to the same thing; also things which among those in the same genus have the greatest difference between themselves; and things which being in the same recipient differ very much from each other. Things, too, are called contraries, which differ the most of all

* *i. e.* Says Alexander which are similar to each other according to species and form, as the Dioscuri called Zethus and Amphion.

others

others under the same power * ; and things of which the difference is the greatest, either simply, or according to genus, or according to species. But, of other things which are called contraries, some are so denominated because they possess, and some because they are recipients of, things of this kind. Some, again, are so called, because they are effective, or passive, agents, or patients, rejections or assumptions, habits or privations of these and the like. But since *the one* and *being* are manifoldly predicated, it is necessary that other things also should follow which are predicated according to these. So that there will be a distribution of *same*, *different*, and *contrary* through the several predicaments.

But things are said to be different in species, which, being of the same genus are not placed under each other, and also such things as being in the same genus possess difference, together with such as have contrariety in their essence.

Either all contraries too, or those which are primarily so denominated, are different in species. Also those things are different in species, the definitions of which in the ultimate species of genus are different, as man and horse which are individuals in genus, but their definitions are different. This is likewise the case with such things which, being in the same essence, possess diversity. But things are the same in species, which are predicated in a mode opposite to these.

C H A P. XI.

WITH respect to PRIOR and POSTERIOR, some things are so called because there is a certain first and a principle in every genus: for that is prior which is nearer to a certain principle, defined either simply and by nature, or relatively, or according to situation, or by certain things. Thus, for instance, some things are prior and posterior according to place; prior, indeed, because they are nearer to a certain place definite by nature, as to the middle, or the extremity, or because they are nearer to any thing which is casually definite. But that which is more remote is posterior.

Again: some things are prior and posterior according to time. For some things are called prior, because they are more remote from the present time, as with respect to things which have been already transacted. Thus the

* By *power* here Aristotle appears to me to signify *natural habit*, which is the subject of contraries; as, for instance, the visive power is the subject of acute and dull vision.

Trojan are prior to the Median transactions, because they are more distant from the present time. But other things are prior, because they are nearer to the present time, as is the case with things future. Thus the Nemæan are prior to the Pythian games, because they are nearer to the present time, which present time we use as the beginning, and as that which is first. Some things, again, are prior and posterior according to motion. For that which is nearer to the first mover of a thing, is prior; and, in this sense, a boy is prior to a man. But this is a certain principle simply considered. Some things, too, are prior according to power; for that which transcends in power and that which is more powerful, are prior. But of this kind is that nature whose free-will something else which is posterior necessarily follows; so that, the former not moving, the latter is not moved, and when the former moves the latter is moved. But free-will is a principle.

Again: some things are prior according to order: and these are such things as are proportionally distant from one certain definite thing. Thus, in a dance, he who obtains the second place is prior to the third in rank; and, in a musical instrument, the paranete* is prior to the nete: for in the former the Coryphæus, but in the latter the middle, is the principle. After this manner, therefore, these things, are said to be prior.

But, according to another mode, that is said to be prior which antecedes in knowledge, as being simply prior. But, of these, some are prior according to reason, and others according to sense. For, according to reason, universals are prior, but according to sense, particulars. And, according to reason, accident is prior to the whole; as, for instance, the musician, to man the musician. For the whole reason or definition will not be without the part; though it is not possible that a musician can be, unless there be a certain, or some particular musician.

Further still: the participated properties of things prior are called prior, as, for instance, rectitude is prior to smoothness. For the former is an essential property of a line, but the latter of a superficies. Some things, therefore, are after this manner called prior and posterior. But some things are so denominated according to nature and essence †; and these are such things as are able to subsist without others, but others cannot subsist without them: which division is used by Plato.

* *Paranete* is the last string but one, and *nete* is the last string.

† *Kai ouvriav* is omitted in the text, but belongs to it, as is evident both from the version of Beffarion, and the Commentary of Alexander.

But

But since *to be* is manifold, in the first place, the subject is prior, through which essence is prior. In the next place, things in capacity are prior in a different manner from those which are in energy. For some things are prior according to capacity, but others according to energy. Thus the half is in capacity prior to the whole, and the part to the whole, and matter to essence. But these are posterior in energy; for the whole being dissolved, they will be in energy. But after a certain manner all things which are called prior and posterior are so called according to these. For some things according to generation * may be without others; and after this manner the whole is prior to its parts. But some things may subsist without others according to corruption; and after this manner the part is prior to the whole. And the like takes place in other things.

C H A P. XII.

CAPACITY is called, in the first place, the principle of motion or mutation in another thing, or so far as it is another. Thus the architectural art is a capacity which does not subsist in the structure raised by that art: but the medical art being a capacity, will subsist in him who is healed, but not so far as he is healed. In short, therefore, one thing which is the principle of mutation or motion, is said to be capacity in another thing, so far as it is another. But another thing is so denominated from another, or so far as it is another: for so far as it is passive, it becomes passive to something. Sometimes, therefore, when it is possible for any thing to be passive, we say that it is *capable* of being passive; but sometimes we assert this, not according to every passion, but if a thing is capable of being passive with reference to that which is better. Again: benefiting another, or freely doing good, is called capacity. For sometimes we say that those who have alone walked or discoursed, but not well, or as they wished to do, are not *capable* of speaking or walking. And in a similar manner with respect to being passive.

Further still: all habits, through which the possessors are altogether void of passion, or are immutable, or not easily changed to a worse condition, are called capacities. For some are broken, and bruised, and bent, and in short corrupted, not from being capable, but from not being capable, and from

* Viz. Of that which is generated, when the whole is in energy, the parts cannot be in energy. As the whole, therefore, is, and the parts are not, the whole is prior to the parts.

being

being in something deficient. But others are impassive to things of this kind ; and these are such things as scarcely and in a small degree are passive, through *capacity*, and *the being capable*, and from subsisting in a certain manner.

But since capacity is predicated in so many ways, *the capable* or *possible* also, after one manner is said to be that which has the principle of motion or mutation. For that from which a permanent condition or rest may proceed, is something *capable* in another, or so far as it is another. In the second place, that is capable which can be passive to something else. In the third place, that which has a capacity of this kind of being changed to any thing, whether to that which is better, or to that which is worse. For that which is corrupted appears to be *capable* of being corrupted, or it would not have been corrupted, if this was *impossible*. But now it has a certain disposition, cause, and principle of a passion of this kind. For sometimes it appears to be such because it possesses something, and at other times because it is deprived of something. But if privation is in a certain respect habit *, all possibles from possessing something will, indeed, be possibles : and if privation is not a certain habit, possibles will be denominated equivocally. So that a thing is possible, partly because it possesses a certain habit and principle, and partly because it possesses a privation of this, if it be possible that privation can be possessed.

In the fourth place, a thing is capable or possible because it has not a capacity, or principle in another, so far as another, by which it can be corrupted. But further still : all these are called possibles, because they alone happen to be generated, or not to be generated, or to be generated in a becoming manner. For in inanimate natures a capacity of this kind is inherent, as in instruments. Thus they say that one lyre is capable of sounding and another not, if it is not a well-sounding lyre.

But incapacity is the privation of capacity, and a *certain* ablation of such a principle, as we have related, or an entire ablation of it ; or it is an ablation of naturally possessing a thing, or of possessing when it is naturally adapted to possess. For they do not say that a boy and an eunuch are similarly incapable of generating. Further still : incapacity is opposite as well to that capacity which is alone motive, as to that which is motive in a becoming manner. And, with respect to impossibles, some are so denominated according to

* For privation is not the mere absence of a thing ; but absence accompanied with a disposition towards that which is absent.

these

these modes of incapacity, but others, after a different manner, as, for instance, the possible and impossible. That is impossible indeed, the contrary of which is necessarily true. Thus, it is impossible for the diameter of a square to be commensurable with its side, because a thing of this kind is false. And the contrary of this is not only true, but necessary, viz. that the diameter is incommensurable with the side. That the diameter, therefore, is commensurable, is not only false, but is necessarily false. But the contrary to this is the possible, when it is not necessary that the contrary is false. Thus, it is possible for a man to sit; for that he does not sit, is not necessarily false. The possible, therefore, after one manner, as we have said, signifies that which is not necessarily false. But after another manner, it signifies that which is true; and according to another acceptation, that which may be true. But the *capacity* which is spoken of in geometry, is metaphorically called capacity. These possibles, however, are not so called according to capacity. But all those which are denominated according to capacity, are all of them so called with reference to one first capacity: and this is the principle of mutation in another so far as it is another. For, with respect to other things that are called possibles, some are so called, because something else pertaining to them possesses a capacity of this kind; others, because something belonging to them does not possess it; and others, because they possess this capacity themselves. And in a similar manner with respect to impossibles. So that the proper definition of the first capacity will be this, a principle effective of mutation in another, so far as it is another.

C H A P. XIII.

QUANTITY is called that which is divisible into things inherent, either or each of which is one thing, and is naturally adapted to be this definite particular. Multitude, therefore, is a certain quantity, if it be numerable; but magnitude, if it be measurable. But multitude is called that which is divisible in capacity into parts non-continuous; and magnitude that which is divisible into parts continuous. Again: of magnitude, that which is continuous one way is length; that which is continuous two ways, breadth; and that which is continuous three ways, depth. But of these, the multitude which is finite is number; length is a line; breadth superficies; and depth body.

Further still: some things are called certain quantities essentially, but others according to accident. Thus, for instance, a line is a certain quantity essentially.

tially, but a musician accidentally. But, of quantities which have an essential subsistence, some are according to essence; as, for instance, a line is a certain quantity. For, in the definition explaining what it is, a certain quantity is inherent. But others are passions and habits of an essence of this kind; as, for instance, the much and the few, the long and the short, the broad and the narrow, the high and the low, the heavy and the light, and other things of this kind. But the great and the small, the greater and the lesser, are the essential passions of quantity, considered as well essentially, as with reference to each other. These appellations also are transferred to other things.

But of those things which are called quantities according to accident, some are so called in the way we have already mentioned; for, because that in which a musician and white are inherent is a certain quantity, those also are called quantities. But others are so called as motion and time. For these are denominated certain continued quantities, because those things are divisible, of which these are passions. And here I do not mean that which is moved, but that in which motion is effected. For, because that is a quantity, motion also is a quantity. Time also is quantity, because motion is such.

C H A P. XIV.

QUALITY is called after one manner the difference of essence. Thus, for instance, when it is asked *What kind of* an animal is man (or what is the *quality* by which he is distinguished from other animals), we answer that he is a biped: when the same question is asked of a horse, the answer is that he is a quadruped; and when it is asked *What kind of* figure a circle is, we reply, a figure without angles; by which it appears that difference according to essence is quality. After one manner, therefore, quality is called difference of essence. But after another manner, as things immoveable, and mathematical entities. Thus, for instance, numbers are certain qualities, I mean such as are composite, and which are not alone referred to one, but of which a superficies and a solid are imitations. But these are plane, square, and cube numbers; and, in short, whatever besides a certain quantity is contained in the essence of number; for the essence of every number consists in being assumed once. Thus, for instance, the essence of six does not consist in twice three*, or thrice two, but in being taken once: for once six is six.

* For twice three, or thrice two, is not simply six, but six in conjunction with a certain quality.
Again:

Again : such things are called qualities as are the passions of essences that are moved ; as, for instance, heat and cold, whiteness and blackness, gravity and levity, and things of this kind, according to which bodies are said to be internally changed. Further still : virtue and vice ; and, in short, good and evil, are qualities. Quality, therefore, may be nearly denominated according to two modes ; and of these one is the principal. For the first quality is difference of essence : but of this the quality which is in numbers is a certain part. For it is a certain difference of essence, but either not of those things which are moved, or not so far as they are moved. But these are the passions of things which are moved, so far as they are moved, and the differences of motions. But virtue and vice are certain parts of passions : for they manifest the differences of motion and energy, according to which those beings that are in motion, do or suffer well or ill. For that which is able to be moved, or to energise, in this particular manner, is good ; but that which is moved, or energised, in that particular manner, is depraved. But especially good and evil signify quality in animated natures, and of these, particularly in such as possess a free will.

C H A P. XV.

WITH respect to RELATIVES, some things are so denominated, as the double to the half, and the triple to the third, and, in short, the multiple to the submultiple, and the surpassing to that which is surpassed. But others are so called, as that which heats to that which is heated ; that which cuts to that which may be cut ; and, in short, as that which is active to that which is passive. Others, again, are as that which is measurable to measure, that which is the object of science to science, and that which is sensible to sense.

But the first among these are indeed denominated according to number, either simply, or definitely with respect to each other, or to one. Thus, the double to one is a definite number : but multiple is the relation according to number to one, but not definite ; as, for instance, this or that. But sesquialter * to subsequalter is the relation according to number to a definite number. Superpartient † to subsuperpartient is according to the indefinite,

* Sesquialter ratio, is the ratio of 3 to 2 ; and subsequalter that of 2 to 3.

† Superpartient ratio is when one quantity contains another once, and a certain number of aliquot parts besides ; and subsuperpartient ratio is the ratio of the lesser of two such quantities to the greater.

in the same manner as multiple to one. But the exceeding to that which is exceeded, is entirely indefinite according to number. For number is commensurable; but the exceeding and that which is exceeded are denominated according to incommensurable number. For the former is to the latter so much, and something still beyond. But this is indefinite: for whatsoever takes place, it is either equal or not equal. All these relatives, therefore, are denominated according to number, and are the properties of number: and still further, the equal, the similar, and the same, according to another mode. For they are all denominated according to *the one*. Thus, things are same of which the essence is one; but similar of which the quality is one; and equal of which the quantity is one. But *the one* is the principle and measure of number. So that all these are called relatives according to number, but not after the same manner.

But things active and passive are relatives according to an active and passive power, and the energies of powers; as, for instance, that which is capable of heating to that which may be heated, because they are endued with power; and, again, that which heats to that which is heated, and that which cuts to that which is cut, are relatives as things energising. But of those things which are relatives according to number, there are not energies, unless after the manner we have elsewhere mentioned: for energies according to motion do not belong to numbers. Besides, of those things which are called relatives according to power or capacity, some are so denominated according to time; as, for instance, that which makes to that which is made, and that which will make to that which will be made. Thus, also, a father is called a father of a son; for the former makes, but the latter has been something passive.

Again: some things are called relatives according to a privation of power, as the impossible, and such things as are so denominated, as the invisible. Things, therefore, which are called relatives according to number and power, are all of them so called because each derives that which it is from reference to another, and not because something else is denominated with reference to it. But that which may be measured, that which is the object of science, and that which is the object of the dianoëtic power, are called relatives, because something else is denominated with reference to these. For that which is the object of the dianoëtic power signifies that the dianoëtic power subsists with reference to it: but the dianoëtic power does not subsist with reference to him to whom

whom it belongs; for the same thing would be twice said *. In like manner, fight is the fight of something, and not of him to whom it belongs, although to assert this is true, but it is referred to colour, or something else of this kind. But after that manner, the same thing would be twice said, I mean, that fight is the fight of him of whom it is the fight. Of things, therefore, which are essentially relatives, some are so called after this manner, but others if their genera are things of this kind. Thus, for instance, the medicinal art ranks among relatives, because the science which is the genus of it appears to belong to relatives. Add, too, those things, by which such as possess them are called relatives. Thus, equality is a relative, because the equal is a relative; and similitude, because the similar is a relative. But some things are called relatives according to accident. Thus, man is a relative, because it happens to him to be double; and this belongs to relatives: white, too, is a relative according to accident, if it happens to the same thing to be double and to be white.

C H A P. XVI.

THE PERFECT is denominated that of which no part can be externally assumed. Thus, for instance, the time of any thing is perfect, beyond which no time can be assumed which is a part of this time. The perfect also is that which, according to virtue and well-being, has not a transcendency with respect to a certain genus. Thus, a physician is a perfect physician, and a piper a perfect piper, when they are in no respect deficient according to the species of their proper virtue. Thus, too, metaphorically speaking, in things evil, we say a perfect sycophant, and a perfect thief; since we also call these characters good; as, for instance, a good thief, and a good sycophant. Virtue also is a certain perfection: for a thing is then perfect, and every essence is then perfect, when no part of its natural magnitude, according to the species of its proper virtue, is wanting.

Further still: those things are called perfect to which a worthy end is pre-

* " For if any one (says Alexander) should affirm that science is not referred to that which is the object of science (*το επιστητον*), but to him who possesses science, to the inquiry, What that is of which it is the science? the answer will be, That of which it is the science; *i.e.* he who possesses science; and thus the answer will be to no purpose, and the same thing will be twice said."

sent: for they are perfect from possessing an end. So that, since the end is something belonging to extremes, transferring it also to things depraved, we say that a thing is perfectly destroyed, and is perfectly corrupted, when nothing of corruption or evil is deficient, but it has arrived at the very extremity of these. Hence death, also, according to a metaphor, is called the end, because both are extremes. Things, therefore, essentially called perfect are in so many ways thus denominated; some, because according to well-being, they are in no respect deficient, nor have transcendence in each genus, nor any thing belonging to them external. But other things are called perfect according to these, because they either effect or possess something of this kind, or are adapted to this, or in some other way are denominated with reference to things called primarily * perfect.

C H A P. XVII.

BOUND is called that which is the last of any thing beyond which nothing can be assumed, as the first thing which may be assumed, and within which primarily all things are placed; also, that which is the form of magnitude, or of that which possesses magnitude, and which is the end of every thing. But that to which motion and action tend, is a thing of this kind, and not that from which they begin. Sometimes, however, it is both that from which motion and action proceed, and that to which they tend; also that for the sake of which other things operate, and the essence of every thing, and the formal cause to every thing. For this is the bound of knowledge; and if of knowledge, also of a thing. So that it is evident, that in as many ways as principle is predicated, in so many ways bound also is predicated, and still more multifariously. For principle is a certain bound; but it is evident † that not every bound is a principle.

C H A P. XVIII.

ACCORDING TO WHICH is predicated multifariously. Considered in one way, it is the form and the essence of every thing. Thus, for instance, the

* *Πρωτος*; is omitted in the original; but according to the Commentary of Alexander Aphrodisiensis ought to be inserted.

† From the Latin version of Argyropylus, it appears that the manuscript he consulted ended here with *α; διλον*; for he concludes this chapter with *ut patet*. I have therefore inserted these words in my version, as they appear to me to be properly added.

good

good itself is that *according to which* a thing is good. But considered in another way, it is that in which primarily a thing is naturally adapted to be produced, as, for instance, colour in superficies. Hence, that which is primarily called *according to which* is form; but that which is secondarily thus denominated, is as the matter, and the first subject of every thing. In short, *according to which* is predicated in as many ways as cause. For to ask, *according to which* did a man arrive? is the same thing as to ask, *for the sake of which* did he arrive? And to inquire *according to which* a man paralogises, or syllogises, is the same thing as to inquire the cause of his paralogism, or syllogism.

Again: *according to which* signifies *according to position*; as, for instance, *according to which* does he stand? or *according to which* does he walk? For all these signify position and place. So that *according to itself*, or the essential, is also necessarily predicated multifariously. For, in the first place, it signifies the formal cause of a thing, or the proper form and definition explaining its essence; as, for instance, Callias, and the proper form of Callias. In the second place, it signifies such things as are inherent in definition; as, for instance, Callias is *essentially* an animal. For, in the definition of Callias, animal is contained: for Callias is a certain animal. In the third place, it signifies that which primarily receives any thing in itself, or in a certain part of itself. Thus, for instance, superficies is essentially white, and man is essentially an animal. For soul is a certain part of man, in which life is primarily inherent. In the fourth place, it signifies that of which there is not any other cause. For of man there are many causes, such as animal, biped; but, at the same time, man is man essentially. And, in the fifth place, it signifies such things as are inherent in some particular thing alone, and so far as it is alone. Hence, that which has a separate, has also an *essential*, subsistence.

C H A P. XIX.

DISPOSITION is called the order of that which has parts, either according to place, or according to capacity, or according to form. For it is requisite that it should be a certain position, as the name also, viz. *disposition*, evinces.

CHAP.

C H A P. XX.

HABIT is denominated, according to one mode, a certain energy, as it were, of that which possesses and that which is possessed ; being, as it were, a certain action or motion. For, when any thing makes, and another thing is made, the making subsists between. In like manner, habit* subsists between him who possesses a garment, and the garment which is possessed. It is evident, therefore, that there cannot be another habit of this habit. For there would be a progression to infinity, if there was a habit of the habit which is possessed. But, according to another mode, habit is called disposition conformably to which that which is disposed is well or ill disposed, and this either essentially, or with relation to another. Thus, health is a certain habit ; for it is a disposition of this kind. Further still : it is called habit, if it is a portion of a disposition of this kind. Hence also the virtue of parts is a certain habit.

C H A P. XXI.

PASSION is called in the first place quality, according to which any thing may be altered ; as, for instance, white and black, sweet and bitter, gravity and levity, and other things of this kind. But, in the second place, it signifies the energies and internal changes of these. And, still more than these, noxious internal changes and motions, and especially such changes as are not only noxious but painful. Lastly, calamities and sorrows of great magnitude are called passions.

C H A P. XXII.

PRIVATION is said to take place according to one mode, when a thing does not possess something which is naturally adapted to be possessed, although it is itself not naturally adapted to possess it. Thus, for instance, a plant is said to be deprived of eyes. But according to another mode, when either a thing itself, or the genus of it, does not possess a thing which it is naturally adapted to possess. Thus, a blind man is deprived of sight in one way, and a mole in another ; the latter according to genus, but the former essentially.

* For *habit* here is a certain *having*, which subsists between him who *has*, and the garment which is *had*.

Further

Further still: privation takes place, if a thing is naturally adapted to possess, yet does not possess when it is so adapted. For blindness is a certain privation: but an animal is blind, not according to every age, but in that only in which, when it is naturally adapted to see, it does not see. In like manner, privation takes place when a thing does not possess *in which, according to which, to which, and so far as it is naturally adapted to possess*. Further still: a violent ablation of any thing is called privation. And, as often as negations are denominated from *a*, so often also are privations denominated. For a thing is called *anison*, unequal, because, though naturally adapted to possess equality, it does not possess it; and *aoraton*, invincible, because it is entirely without colour, and because it possesses it defectively. In like manner, an animal is called *apous*, without feet, when it is entirely deprived of feet, and when it has them attended with some defect. Again: privation takes place when a thing possesses but a little, as any fruit with a small kernel, viz. in this case it subsists in a certain respect defectively. Also, when a thing cannot be effected with facility, or in a proper manner. Thus, a thing is insecable, not only because it is not cut, but because it cannot be easily or well cut. Further still: privation takes place when a thing is not in any respect possessed. For he is not called blind who has only one eye, but he who is deprived of sight in both. Hence, not every man is good, or bad, or just, or unjust, but there is also an intermediate character.

C H A P. XXII.

TO HAVE is predicated multifariously. After one manner it is denominated when any being acts according to its own nature, or according to its own impulse. Hence, a fever is said *to have* a man, and tyrants cities, and those who are clothed a garment. But after another manner, that in which any thing subsists as a recipient. Thus, for instance, the brass *has* the form of the statue, and the body the disease. In the third place, as that which contains things contained. For a thing is said *to be had* by that in which it is contained. Thus we say, that the vessel *has* that which is humid, the city men, and the ship sailors. Thus also the whole *has* the parts. Further still: that which prevents any thing from being moved or acting according to its own impulse, is said *to have* this very thing. Thus, pillars *have* the imposed weights, and poets make Atlas *to have* the heavens, in order to prevent

prevent them from falling on the earth, as certain physiologists say. After this manner too, that which connects is said *to have* that which it connects, as if every thing according to its own impulse would be separated and dispersed. And *to be in any thing* is predicated similarly, and in a manner consequent to *to have*.

C H A P. XXIV.

TO BE FROM A CERTAIN THING, is after one manner predicated from which, as from matter: and this in a two-fold respect, either according to the first genus, or according to the last form. Thus, all liquids are from water, and the statue is from brass. But after another manner, it is predicated as from the first moving principle. Thus, for instance, from what did battle arise? From defamation, because this is the principle of the battle. In the third place, it is denominated from that which is a composite from matter and form, as the parts from the whole, the verse from the Iliad, and the stones from the house. For form is the end; and that which has the end is perfect. In the fourth place, as species from a part. Thus, man is from biped, and a syllable from a letter. For these are from those, in a manner different from that in which the statue is from brass. For a composite essence is from sensible matter; but form also itself consists from the matter of form*. Some things, therefore, are predicated after this manner, and some, if a thing subsists according to a certain part of these modes. Thus, the offspring is from father and mother, and plants from the earth, because they are from a certain part of these. In the fifth place, that which subsists after any thing according to time. Thus, night is said to be from the day, and a storm from fair weather, because the former are posterior to the latter. But of these, some are thus denominated from having a mutation into each other, as the particulars which have been just mentioned; but others because they are alone consequent according to time. Thus, a navigation was made from the equinoctial, because it was made after the equinoctial: and the Thargelia† are from the mysteries of Bacchus, because they are posterior to these mysteries.

* This matter is not sensible, since the parts of definition, or, in short, of form, are not sensible. For the matter of form and the very nature of a thing are the parts constituting definition, which, as well as form, are apprehended by the reasoning power.

† Feasts in honour of Apollo.

C H A P.

C H A P. XXV.

PART is denominated according to one mode, that into which quantity, so far as quantity, can be divided. For, always that which is taken away from quantity, so far as quantity, is called a part of it. Thus, two is after a manner said to be a part of three. But, according to another mode, that alone is called a part of quantity which measures it. Hence in a certain respect two, as we have said, is a part of three, but in another respect is not. Again: those things into which form can be divided without quantity are called the parts of form. Hence they say that species are parts of genus. Further still: those things are called parts, into which any thing is divided, or from which the whole is composed, or form, or that which possesses form. Thus, the brass is a part of a brazen sphere, or of a brazen cube. But this is the matter in which form is received. An angle also is a part*. Again: those things which are contained in the definition of a thing are also parts of the whole. Hence genus is called a part of species; but species is in a different manner a part of genus.

C H A P. XXVI.

WHOLE is called that of which no part is wanting of those things from which the whole is said naturally to consist†. Also, *whole* is that which contains things contained so as to form one thing. But this in a twofold respect: for either in such a manner that each may be one, or so that one thing may emerge from these. For universal, and, in short, that which is denominated as being a certain whole, are universal and a whole because they contain many things, are predicated of particulars, and all are one according to the predicate. Thus man, horse, and god are all of them one, because each of them is an animal. But the continuous and the finite are a whole, when one thing is produced from many things which are inherent, especially when this multitude is inherent in capacity, and not in energy. But of these, things which have a natural subsistence are more wholes than things which are formed by art, as we

* For it signifies form.

† For when no part is wanting to a thing which subsists naturally, such a thing is properly a whole.

T

have

have said in the division of things denominated *one*. For totality is a certain unity. Again: since quantity has a beginning, middle, and end, of those quantities in which position does not make a difference, *the all* is predicated; but of those in which it does make a difference, *the whole* is predicated. And of those things which admit both, *the whole* and *the all* are predicated. But these are things of which the same nature remains in transposition, but not the same form; as, for instance, wax and a garment. For they are called *whole* and *all*, in consequence of possessing both. But water, such things as are moist, and number, are denominated *all*. For we do not say the whole number, and the whole water, except metaphorically. But of those things of which *all* is predicated as a certain one, *all things* is likewise predicated. Thus, of things divided, we say *all* the number, *all* these monads.

C H A P. XXVII.

THE DIMINISHED OR MUTILATED is predicated, not of every quantity which may casually occur, but it is requisite that it should be divisible and a whole. For two things are not mutilated, when one of them is taken away (for a thing mutilated, and that by the ablation of which it was mutilated, can never be equal); nor, in short, is any number mutilated: for it is necessary that its essence should remain. Thus, if a cup is mutilated, still it is necessary that it should be a cup; but a number is no longer the same when a part is taken away. Besides, neither can all those things be called mutilated, which consist of dissimilar parts. For number is that which has dissimilar parts, as, for instance, the duad and triad: but, in short, none of those things are mutilated, of which the position makes no difference; as water, or fire, and the like. But it is necessary that mutilated natures should be such things as have an essential position.

Again: it is requisite that they should be continuous. For harmony consists from dissimilar parts, and has position, but it does not become mutilated. Besides this, neither are such things as are wholes mutilated by the privation of any part indifferently. For the principal parts of essence, or any parts indifferently, being taken away, will not make that which remains mutilated. Thus, if a cup is perforated, it is not diminished or mutilated; but this happens when its handle, or some one of its extremities, is taken away. A man also is mutilated, not when his flesh or spleen, but when some extreme part, is taken away,

away, and this not any part indifferently, but which, when wholly taken away, cannot be again generated. Hence men that are bald are not mutilated.

C H A P. XXVIII.

GENUS is predicated, when the generation of things possessing the same species is continuous. Thus, for instance, it is said, as long as the genus (*i. e.* race) of men may be, *i. e.* as long as the generation of them is continuous. It is also predicated as that from which things derive their existence as the first mover. Thus, according to genus, some are called Greeks, and others Ionians, because the former descended from Helenus and the latter from Ion, as the first generators. But genus is rather denominated from the generator than from the matter. For genus is also denominated from the female, as, for instance, from Pyrrha. Again: superficies is called the genus of superficial figures, and solid of such as are solid: for, of every figure, this is such a superficies, and that is such a solid. But genus is that which is the subject of differences.

Again: genus also is that which is first inherent in definitions signifying the essence of a thing, the differences of which are called qualities. In so many ways, therefore, is genus predicated: for it is either denominated according to a continued generation of the same species, or according to the first mover of the same species; or it is predicated as matter. For that of which there is difference and quality, is that subject which we call matter. But things are called different in genus, of which the first subject is different, and one is not resolved into the other, nor both into the same. Thus, form and matter are different in genus, and such things as are denominated according to a different figure of the predication of being. For, of beings, some things signify *what a thing is*, others *what kind of a thing it is*, and others signify conformably to the division we have previously made. For neither are these resolved into each other, nor into one certain thing.

C H A P. XXIX.

THE FALSE is denominated after one manner, as a thing false: and this in the first place, because it is not composed*, or because it is impossible for it

* In discourse, truth and falsehood merely consist in composition: not so in things.

to be composed ; as when it is said that the diameter of a square is commensurable with its side, or that you sit. For, of these, the former is always false, but the latter sometimes ; so that these are non-entities. But other things are false, which are indeed entities, but are naturally adapted to appear either not such as they are, or things which are not, as, for instance, pictures and dreams. For these are indeed something, but not the things of which they cause the imagination. Things, therefore, are thus said to be false, either because they are not, or because the imagination which emerges from them is the imagination of that which is not.

But discourse is false, which is of non-entities, so far as it is false. On this account every false discourse is employed about something different from that respecting which it would be a true discourse. Thus, the discourse respecting a circle is false when applied to a triangle. But the discourse about any thing which explains its essence, is partly one and partly many, since a thing itself, and itself considered as the recipient of something else, are in a certain respect the same ; as, for instance, Socrates, and Socrates the musician. But a false discourse is simply considered as a discourse about nothing. On this account Antisthenes entertained a stupid opinion when he thought that nothing could be said, except one thing of one thing, by a proper discourse ; the consequence of which opinion must be, that there can be no contradiction, and it will be scarcely possible to make a false assertion. Any thing, however, may be asserted, not only by a discourse peculiar to that thing, but also by that which belongs to another thing ; and this so as to be perfectly false, and yet in a certain respect true. After this manner, the number 8 is double from the definition of the duad. Some things, therefore, are after this manner denominated false. But a man is false who readily and voluntarily admits false assertions, not for the sake of any thing else, but merely because they are false, and who is the cause of others adopting such like assertions. Just as we say that things are false which produce a false phantasy. Hence the reasoning in the lesser Hippias of Plato deceives, which endeavours to show that the same man is both false and true : for he considers him as false who is capable of deceiving ; but such a one possesses both knowledge and prudence. Besides, it also says that he who is voluntarily depraved is the better man. But the false here is collected by induction. For he who is voluntarily lame is better than him who is involuntarily so : for here voluntary lameness is considered as the same with an imitation of lameness. Since, if he were voluntarily lame, he
would

would perhaps be worse; just as this would also be the case in moral conduct.

CHAP. XXX.

ACCIDENT is called that which is inherent in something, and of which something may be truly asserted, yet neither necessarily, nor for the most part; as, for instance, if any one digging for a plant in a ditch should find a treasure, the finding the treasure would be an accident to him who digs in the ditch. For neither does the one follow from the other, nor after it. Nor, if any one plants, will he for the most part find a treasure. A musician also may be white; but since this takes place neither from necessity, nor for the most part, we call it an accident. Since, therefore, there is something which has a subsistence, and a subsistence in something; and some of these are in a certain place, and at a certain time, whatever has a subsistence indeed, but not because it is this particular thing, or because it is now, or here, will be an accident. Nor is there any definite cause of accident, but the cause of it is casual; and this is indefinite. Thus, some one may have accidentally come to Ægina, if it was not his design to go to that place, but he was driven thither by a storm, or taken by robbers. Accident, therefore, was generated and is, but not so far as itself is, but so far as something else is. For the storm was the cause of his going to that place, to which he did not fail: but this was Ægina. Accident is also after another manner denominated that which essentially belongs to a thing, but yet is not contained in the essence of that thing; as, for instance the possession of angles equal to two right in a triangle*. And it happens, indeed, that accidents of this kind are eternal: but this is not the case with any of the others; the reason of which we have elsewhere assigned†.

* For these are not contained in the definition which explains the essence of a triangle. For the definition of a triangle is this: a figure contained by three right lines.

† Respecting those things which are after this manner essentially present, Aristotle disputes in his Last Analytics.

ARISTOTLE'S

ARISTOTLE'S METAPHYSICS.

B O O K VI*.

C H A P. I.

THE principles and causes of beings are investigated; and it is evident that they are investigated of beings so far as beings. For there is a certain cause of health and a good habit of body. Of mathematical entities, too, there are principles, elements, and causes. And, in short, every dianoëtic science, or which participates any thing of the dianoëtic power, is conversant with causes and principles, which are either more accurate or more simple. But all these circumscribing one particular thing, and a particular genus, are employed about this, but not about being simply, nor so far as it is being, nor do they pay any attention to the inquiry what a thing is: but from this, some making it manifest from sense, but others assuming it from hypothesis, thus demonstrate in a more necessary or more remiss manner things essentially present with the genus, about which they subsist. On which account it is evident that there are not demonstrations of essence, nor of definition from an induction of this kind, but there is some other mode of rendering these

* Aristotle, says Alexander, obscurely asserts in this book, more openly in the following, and still more clearly in the eighth book, that the first philosophy is conversant with the knowledge of being so far as being; that it considers the definition of every thing; unfolds how every thing is to be defined, whether it be intelligible or any thing else; and explains of what things there are definitions, and of what there are not.

apparent.

apparent. In like manner, they are entirely silent as to the genus with which they are conversant, whether it is, or is not, because it belongs to the same dianoëtic power, to make manifest what a thing is, and if it is this thing.

But since the physical science is conversant with a certain genus of being (for it is conversant with such an essence as contains in itself the principle of motion and rest) it is evident that it is neither practical nor effective. For of things which are effective *, the principle, whether it is intellect, or art, or a certain power, is in the efficient; but of things practical the principle, viz. free-will, is in the agent. For the same thing is practicable, and the object of free-will. So that if every dianoëtic energy is either practicable, or effective, or theoretic, the physical dianoëtic energy will be a certain theoretic science; but it will speculate being of such a kind as is capable of being moved, and an essence which is for the most part known through definition, and has not alone a separate subsistence.

It is, however, requisite to understand in what manner the formal cause and definition subsist. For, to investigate without this knowledge is to do nothing. But of things defined, and to which the inquiry *what* they are belongs, some subsist in the same manner as *the flat nose*, and some as *the hollow*. But these differ, because the flat nose is conceived together with matter: for a flat nose is a hollow nose; but hollowness is without sensible matter. If, therefore, all physical things are predicated in a manner similar to a flat nose; as, for instance, nose, eye, face, flesh, bone, and, in short, animal, leaf, root, bark, and plant (for the definition of no one of these is without motion †, but it always possesses matter), it is evident in what manner in physical inquiries it is requisite to investigate and define the essence of a thing, and why it belongs to the natural philosopher to speculate respecting a certain soul, viz. such a soul as is not unconnected with matter. That the physical dianoëtic energy, therefore, is theoretic, is from what has been said evident.

But the mathematical science also is theoretic. Whether, however, it contemplates things immovable, and which have a subsistence separate from sensibles, is at present immanifest. But that there are some mathematical disciplines which contemplate things so far as they are immovable, and so far as

* The effective science, as Aristotle more fully explains in his *Nicomachean Ethics*, is that the work of which remains after its energy. Of this kind is the builder's art: for the work of this art, viz. the house, endures after the operation of building.

† i. e. Matter.

they

they have separate subsistence, is evident. If, indeed, there is something immoveable, eternal, and separate from sensibles, it is manifest that it is the province of the contemplative science to know it, and not of the physical (for the physical science is conversant with certain moveable natures) nor of the mathematical, but of a science prior to both these. For the physical science is conversant with things inseparable indeed, but not immoveable: but of the mathematical sciences, some are conversant with things immoveable indeed, yet not separate *perhaps*, but subsisting as in matter. The first of sciences, however, is employed in the speculation of things separate and immoveable. But it is necessary that all causes, indeed, should be eternal, and especially these: for these * are the causes to the phænomena of things divine. So that there will be three contemplative philosophies, viz. the mathematical, the physical, and the theological. For it is not immanifest, that if a divine nature anywhere subsists, it subsists in a nature of this kind. And it is requisite that the most honorable science should be conversant with the most honorable genus of things. The theoretic sciences, therefore, are more eligible than other sciences; but this (or the theological science) is more eligible than the theoretic.

But some one may doubt whether the first philosophy is universal, or conversant with a certain † genus and one nature. For neither in the mathematical sciences is there the same mode of speculation; but geometry and astronomy are conversant with a certain peculiar nature ‡, while the mathematical science itself is, in short, common to all the branches of that science. If, therefore, there is not any other essence besides things which have a natural subsistence, the physical will be the first science. But if there is a certain immoveable essence, this will be prior, and will be the first philosophy. It will thus also be universal, because it is the first of sciences: and it will be the province of this science to speculate respecting being so far as being, and to contemplate what it is, and what, in short, are the things inherent in it so far as being.

* That is, says Alexander Aphrodisiensis, these immoveable and separate natures are the causes of the celestial spheres, and of divine bodies. We have already observed, that the existence of these separate natures is proved by Aristotle in the latter part of the twelfth book of this work.

† Instead of *περὶ γένος*, as in the original, it should doubtless be *περὶ τὴν γένος*.

‡ i. e. Continued quantity.

C H A P.

C H A P. II.

SINCE, however, being, simply so called, is multifariously predicated, of which predication one is according to accident, but another as that which is true, to which non-being is opposed, as that which is false. But besides these there are the figures of the categories, as, for instance, substance, quality, quantity, where, when, and whatever else there may be of this kind. Again: besides all these, there is that which subsists in capacity, and that which subsists in energy. But, since being is predicated multifariously, we must in the first place say, respecting that which subsists according to accident, that there is no speculation concerning it; of which this is a token, that no science is attentive to accident, neither the practick, nor the effective, nor the theoretic. For neither does he who makes a house, at the same time make such things as happen to the house when built (for these are infinite); since nothing hinders but that the house may be to some pleasant, to others noxious, and to others beneficial, and, as I may say, different from all things, of none of which the building art is effective. After the same manner, neither does the geometrician speculate things which thus happen to figures, nor whether a wooden* triangle and a triangle which has angles equal to two right are different from each other. And this happens rationally; for accident itself is only as it were a name. Hence, Plato† after a certain manner does not improperly dispose non-being about the sophistic art. For the arguments of sophists are, as I may say, the most of all things employed about accident. For they ask, whether a musician and a grammarian are a different or the same person; whether the musician Coriscus and Coriscus are the same; and if every thing which is, but is not always, is generated. So that if he is a musician he is made a grammarian, and if he is a grammarian he is made a musician, and whatever other arguments there are of this kind. For accident appears to be something near to non-entity. And this is evident from what has been just now said. For, of things which subsist in a different manner from accident, there is generation and corruption; but this is not the case with things which subsist according to accident.

* From the Commentary of Alexander Aphrodisiensis on this part, it appears that το ξυλινον ought to be here inserted. There is nothing more in the printed text than οὐδ' εἰ ἕτερον ἐστὶ τὸ πριγμων. The version of Argyropylos also has “neque si triangulus ligneus,” &c.

† In the Sophista.

U

But

But at the same time let us speak still further about accident, as much as possible showing what the nature of it is, and through what cause it subsists. For, at the same time, perhaps it will be evident why there is not any science of accident. Since, therefore, in beings some things always subsist in a similar manner*, and from necessity (not from that necessity which is denominated according to the violent, but from that by which we say a thing cannot subsist otherwise), but others, though they are not necessarily, nor always, yet they are for the most part†, this is the principle, and this is the cause of the subsistence of accident. *For whatever is neither always, nor for the most part, this we say is accident*‡. Thus, for instance, if, when the sun is in Canis, stormy and cold weather should be produced, we should say that this happened; but we should not speak in this manner if suffocation and heat were produced; because the latter is always, or for the most part, but this is not the case with the former. That man is white is also an accident; for this is neither always the case, nor for the most part: but that man is an animal is not from accident. Likewise that a builder should give health, is an accident, because a builder is not naturally adapted to effect this, but a physician: but here it happens that a builder is a physician. A cook, also, intent upon giving pleasure, may make something salubrious, but not from the art of cooking. Hence, we say that this happens, and in a certain respect he makes something salubrious, but simply considered he does not. For of other§ things the powers are sometimes effective; but of these no art nor power is definite. For, of things which either are, or are generated according to accident, the cause is also according to accident. So that, since all things are not from necessity, nor either always are entities, nor are in generation (*i. e.*

* Thus, man is always and from necessity an animal.

† Thus, man has not always five fingers, but for the most part.

‡ The agreement between accident (in Greek *συμβεβηκος*) and the casual or contingent, according to Aristotle, is obvious from this definition of the word; and hence, shortly after, he joins a subsistence according to accident with casual subsistence. Yet Dr. Gillies, inspired with the same lawless rage for novelty which so eminently distinguishes modern wit, has presumed to pervert the genuine meaning of this word in the following note. (See vol. i. of his Aristotle, p. 65.) "The Greek word *συμβεβηκος* is, as far as I know, universally translated 'accident'; *συμβεβηκοτα* in the plural, 'accidents.' (Observe, gentle reader, that this word has a plural, and also that, *accident* in the singular makes *accidents* in the plural.) But accident, in its proper sense of what is casual or fortuitous, has nothing to do with it; and Aristotle's meaning of *συμβεβηκος* ought to be expressed by a Latin or English word derived, not from *accido*, but from *accēdo*."

§ Instead of *των μεν γαρ αλλαι*, I read *των μεν γαρ αλλων*.

becoming

becoming to be, or tending to being), but most things have a subsistence for the most part, it is necessary that there should be something which subsists according to accident, and that it should be such as is a white musician, who is neither always so, nor for the most part. But, since it is sometimes effected, there will be a subsistence according to accident: for, if not, all things will be from necessity. So that matter will be the contingent cause of accident, which subsists differently from that which has a subsistence for the most part, or which seldom fails of subsisting. But this should be the beginning of the inquiry, Whether there is nothing which neither subsists always, nor for the most part, or whether this is impossible. There is, therefore, something besides these things which have a casual subsistence, and a subsistence according to accident. But shall we admit that there is such a thing as that which subsists for the most part, but that there is not in the nature of things that which has a perpetual subsistence? or are there certain eternal entities? These things, therefore, will be the subject of a posterior consideration *. But that there is not a science of accident is evident: for every science is of that which is always, or of that which is for the most part. How, otherwise, can a man learn any thing, or teach another? For it is necessary that the object of science should be defined either by the perpetual, or by a subsistence for the most part; as, for instance, that, to a person in a fever, mead is, for the most part, beneficial. But no one will say that mead administered during the new moon is beneficial in a fever †: for during the new moon this is efficacious, either always, or for the most part. But accident is something different from these. We have, therefore, declared what accident is, and through what cause it is, and that there is not a science of it.

C H A P. III.

THAT there are principles and causes which rise into existence and perish without being generated and corrupted is evident. For, if this were not the case, all things would be from necessity, if it is necessary that, of that which is generated and corrupted, there should be a certain cause which does not sub-

* *i. e.* In the eleventh and twelfth books of this work.

† For, as Alexander observes, it should rather be said, that because he who drinks mead in a fever is for the most part benefited, it therefore happens to be efficacious during the new-moon.

sist from accident. For, whether will this thing take place or not? If this is done, it will; but if not, it will not take place. But this will take place, if* something else is effected. And thus, by always taking away time from a definite time, you will at length arrive at *the now*. So that this man will die either by disease or violence, if he goes out of the city; but this will take place, if he should be thirsty; and this will happen, if something else happens: and so we shall arrive at that which now is, or at something which is past. As, for instance, if he should be thirsty; but this will happen, if he has eaten salt meat; and this either is or is not. So that, from necessity, he will either die or not. In like manner, if any one directs his attention to past transactions, the same reasoning will take place. For now this will subsist in something; I mean that which has been effected. All future events, therefore, will be from necessity; as, for instance, death to that which has life. For now something has been effected; as, for instance, contraries in the same body. But if from disease or violence, this will not yet be the case, but if this shall have been effected. It is evident, therefore, that this reduction tends to a certain principle; but this principle does not tend to any thing else. This, then, will be the principle of that which is casual, and there will not be any cause of its generation. But it must be especially considered to what kind of a principle, and to what kind of a cause, a reduction of this kind tends, whether as to matter, or as to that for the sake of which a thing subsists, or as to that which moves. But we shall omit the further speculation of that which subsists according to accident; for it has been sufficiently discussed by us.

But that which subsists as true is being, and that which subsists as false is non-being†, because they are employed about composition and division, and entirely about the division of contradiction. For the true has affirmation in composition, but negation in division; but the false has the contradiction of this division. But in what manner things which subsist together, or which have a separate subsistence, are to be understood, is another question. But I mean things which subsist together, and which subsist apart, not in a consequent order, but so as to become one thing. For the false and the true are

* *Eav* is omitted in this part of the original: for, instead of *τὸντο δὲ ἄλλο*, it should evidently be *τὸντο δὲ τὰν ἄλλο*.

† The original in this place is defective. Instead of *τὸ δὲ ὡς ἀληθὲς ὃν ὡς ψευδὲς*, the sense requires we should read *τὸ δὲ ὡς ἀληθὲς ὃν, τὸ δὲ ὡς ψευδὲς μὴ ὃν*. And this emendation is justified by the versions of Beffarion and Argyropylus.

not in things (so that, for instance, that which is good is true, but that which is evil false); but they subsist in the dianoëtic * part. But the truth and falsehood respecting things simple, and essences, are not in the dianoëtic part. Such things, therefore, as it is requisite to speculate concerning that which is thus being and non-being, we shall afterwards consider. But since composition and division are in the dianoëtic part, and not in things, and that which is after this manner being is different from those things which are properly beings (for the dianoëtic part conjoins or divides either substance, or quality, or quantity, or something else), that which is as accident, and that which is as true being, are to be omitted. For the cause of the one is indefinite, but of the other a certain affection of the dianoëtic part; and both are conversant with the remaining genus of being, and do not render manifest *a certain nature which surpasses being* †; on which account these are to be omitted. But the causes and principles of being itself are to be considered, so far as it is being. And it is evident, from what we have said respecting the multifarious predication of every thing, that being is multifariously predicated.

* The dianoëtic part composes and divides the predicate from the subject; and hence dianoëtic truth and falsehood are not in things themselves, but in this part of the soul. However, as truth is one of the first of things (for, according to Plato, it characterises the essence of divine natures), its illuminations consequently extend to the last of beings. It is, therefore, participated by things in an appropriate manner, viz. according to the nature of the things by which it is participated. But the simple forms of things are not perceived by the dianoëtic power, because in these there is no composition and division, and they are eternally true. They are, therefore, only to be apprehended by intellectual intuition and contact; and there cannot be any deception respecting the vision of these, since, as Aristotle shows at the end of the ninth book, intellect either sees them truly, or does not see them at all.

† That is the ineffable principle of things, which Plato denominates *the one* and *the good*; and in his Republic asserts, and in his Parmenides proves, to be superessential.

ARISTOTLE'S

ARISTOTLE'S METAPHYSICS.

B O O K VII.

C H A P. I.

BEING is multifariously predicated, as we have before evinced in what we have said respecting multifarious predication. For one signification of being is what a thing is, and this particular thing*; another, quality, or quantity, or each of the other things which are thus predicated. But since being is in so many ways predicated, it is evident that the first being among these is, *what a thing is*, which signifies essence. For when we say, *what kind of a thing is this particular thing?* we either say it is good or bad, but we do not say it is of three cubits, or that it is a man. But when we say, *what it is*, we do not assert that it is white, or hot, or of three cubits, but that it is a man or a god. But other things are called beings, because, as belonging to *true being*, some of them are quantities and others qualities, some are participated properties, and others something else of this kind. Whence some one may doubt, whether *to walk*, *to be in health*, and *to sit*, are *being* or *non-being*. And in a similar manner with respect to other things of this kind. For no one of these is naturally adapted to subsist by itself, nor can be separated from essence; but this ought rather to be said of *that which walks*, and of *that which sits*, and of *that which*

* It is well observed by Alexander, that Aristotle usually assumes for essence *hoc aliquid et quid est*, i. e. *τὸδε τι καὶ τί ἐστίν*: in English, *this particular individual thing*, and *what a thing is*.

is in health. For these rather than those appear to be beings, because they have a certain definite subject. But this is essence, and that which is particular, which appears in a predication of this kind. For the good, or that which fits, is not asserted without this. It is evident, therefore, that each of those subsists through this. So that, that which is primarily being, and not some particular being, but being simply, will be essence.

That which is first, indeed, is multifariously predicated; but at the same time essence is the first of all things, in definition, knowledge, time, and nature. For no one of the other predicates has a separate subsistence, but this alone. This also is first in definition. For it is necessary in the definition of every thing, that the definition of essence should be inherent; since we then think that we especially know any particular, when we know *what* man is, or fire is, rather than when we know the *quality*, or *quantity*, or *situation* of a thing. For we then think that we know each of these things themselves, when we know *what* the quantity or the quality is. Indeed, that which formerly has been, and which now is, continually investigated and continually doubted, viz. what being is, is an inquiry what essence is. For this is by some said to be one, but by others more than one; by some it is called things finite, and by others infinite. Whence we also must especially, and in the first place, and only, as I may say, speculate respecting that which is thus being.

CHAP. II.

BUT essence appears* to subsist most manifestly in bodies. On which account we say that animals and plants, and the parts of these, are essences, as likewise natural bodies, viz. fire, water, and earth, and every thing of this kind; and such things as are parts of these, or are composed from these, either partly or entirely; such as heaven and its parts, the stars, sun, and moon. But whether these alone are essences, or likewise other things, or

* Aristotle here with great propriety uses the word *δανσι*, *it appears*. For essence in bodies has only an *apparent*, and not a *real* subsistence; *true essence* being entirely separate from body, and perfectly incorporeal. Suidas, therefore, rightly defines *δανσις* by *ὑπονοια*, *suspicion*; and not less properly classes a perception of this kind with the perception of a phantasm, a dream, and a shadow. Plato also uses this word with the same accuracy, when speaking of the objects of opinion, phantasy, or sense; but he never uses it when speaking of true being, or, in other words, the proper object of intellectual vision.

whether

whether none of these, but certain other things, must be considered. To some, indeed, the boundaries of body, as for instance superficies, line, point, and monad, appear to be essences, and to be more so than body and solid.

Again, some are of opinion that nothing has any subsistence besides sensibles*; but others assert that there are many kinds of essences, and particularly eternal entities. Among these is Plato, who established two kinds of essences, viz. forms and mathematical species; and a third, the essence of sensible bodies. But, according to Speusippus, there are many essences beginning from *the one*, and principles of every essence, one of numbers, another of magnitudes, and another of soul; and after this manner he extends essences. Some again say that forms and numbers have the same nature, but that things in a following order

* “Such as Hippo,” says Alexander, “surnamed the Atheist, who denied that there was any thing besides sensibles, and after him the Epicureans.” I am concerned to find, that this doctrine of Hippo and the Epicureans prevails so much in the present age; though, indeed, this is the natural consequence of an immoderate attachment to experimental inquiries, which, so far from leading the mind to the speculation of an incorporeal essence, cause it to gaze on nothing but the dark and deformed face of matter, and to be the spectator of nothing but delusion and non-entity. Such, indeed, is the prevalence of this opinion, that a *Right Reverend Divine*, some few years since, delivered a sermon at the MAGDALEN! in which he endeavours to prove that the felicity of a future state will be in a great measure corporeal, consisting in certain exquisite sensations of delight. How much more pure, how much more sublime, the doctrine of THE TRULY DIVINE PLATO, that the happiness of the good man hereafter will alone consist in intellectual energies, and in the beatific vision of divinity! For, in the Phædrus, he describes the felicity of the virtuous soul prior to its descent into body, in a beautiful allusion to the arcane visions of the mysteries: Καλλος δὲ τότε ἦν ἰδεῖν λαμπρὸν, ὅτε συνευδαίμονι χορῇ μακαρίων ὦψιν τε καὶ θεῶν, ἐπομένοι μετὰ μὲν διὸς ἡμεῖς, ἄλλοι δὲ μετ’ ἄλλου θεῶν, εἶδον τε καὶ ἐτελούντο τελετῶν ἣν θεμὶς λεγεῖν μακαριώτατην· ἣν ὀργιάζομεν ὁλοκληροὶ μὲν αὐτοὶ οὐτές, καὶ ἀπαθεῖς πανκῶν ὅσα ἡμᾶς ἐν ὑγερῇ χρόνῳ ὑπέμενεν. Ὅλοκληρα δὲ καὶ ἀπλά, καὶ ἀτρεμῇ καὶ ευδαίμονα φασμάτα μύουμένοι τε καὶ ἐποπτεύοντες ἐν αὐτῇ καθαρά καθάρωντες, καὶ ἀσημαντοὶ τούτου ὅτι νῦν δὴ σῶμα περιφέροντες οὐμαζόμεν οὐστρεὺς τροπῶν διδεδευσμένοι. That is, “But it was then lawful to survey splendid beauty, when we obtained, together with that happy choir (*i. e.* the choir of mundane gods and dæmons), this blessed vision and contemplation; and we, indeed, enjoyed this felicity, following the choir together with Jupiter, but others in conjunction with some other god; at the same time beholding and being initiated in those mysteries, which it is lawful to call the most blessed of all mysteries. And these divine orgies were celebrated by us, while we possessed the proper integrity of our nature, and were freed from the molestations of those evils which awaited us in a succeeding period of time. Likewise we became initiated spectators of entire, simple, immovable, and felicitous visions, resident in a pure light; and were ourselves pure and immaculate, and liberated from this surrounding vestment, which we denominate body, and to which we are now bound like an oyster to its shell.”

Such being the felicity of the soul according to Plato prior to its descent, such also will be its felicity

order, viz. lines and superficies, as far as to the essence of the heavens and sensibles, [are second essences *]. But with respect to these things we must consider what has been well or ill † said, what essences there are, and whether there are certain essences besides sensibles or not, and, if there are, in what manner they subsist; also, whether there is any separate essence, and why there is, and how it subsists; or whether there is no essence besides sensibles, having first of all summarily described what essence is.

C H A P. III.

ESSENCE then, if not multifariously, yet at least is predicated according to

felicity when it ascends, and acquires the perfection of its nature. This, too, is conformable to the doctrine of Aristotle. For, in his *Nicomachean Ethics*, he shows that the essence of man consists in intellect: and in his books *On the Soul*, that intellect is the only part of us that is immortal; the irrational part perishing after the death of the body.

Which of these two doctrines most entitles its author to the epithet of *divine*, let the man of intellect determine. For my own part, I am of opinion, that a Paradise, the felicity of which partly consists in *certain exquisite sensations of delight produced by objects acting on the organs of sense*, very little differs from that of the poor Indian in Pope,

————— “ whose UNTUTOR'D MIND
Sees God in clouds, or hears him in the wind.
His soul proud science never taught to stray
Far as the solar walk, or milky way;
Yet simple nature to HIS hope has giv'n
Behind the cloud-topt hill, a HUMBLER HEAV'N:
Some safer world in depth of woods embrac'd,
Some happier island in the wat'ry waste,
Where slaves once more their native land behold,
No fiends torment, no CHRISTIANS thirst for gold.
To BE contents HIS natural desire,
HE asks no angel's wing, or seraph's fire;
But thinks, admitted to that equal sky,
His faithful dog shall bear him company.”

And such a hope is very natural in a RIGHT SIMPLE INDIAN,

* The words within the brackets are omitted in the Greek text; but it appears from the Commentary of Alexander, and also from the version of Argyropylus, that they properly belong to it. The text of Alexander is, “*secundas afferunt substantias esse.*” So that there is wanting to the Greek the words *δεύτερας αὐτὰς οὐσίας.*

† “H” also is here omitted in the original.

X

four

four modes. For the formal cause, universal, and genus, appear to be essence to every thing; and the fourth of these is the subject. But the subject is that of which the rest are predicated, while itself is no longer predicated of any other thing. Hence this must be the first object of our inquiry. For essence appears to be especially the first subject. Such also matter is said to be, after a certain manner; form, in another respect; and the third, that which is composed from these. But I mean by matter, for instance, brass; by form, the figure of the idea; and by that which is composed from these, the whole statue. So that, if form is prior to matter, and is more being, that also which is composed from both will be prior for the same reason. Now, therefore, we have, by a rude delineation, as it were, said what essence is, viz. that it is not predicated of a subject, but is that of which other things are predicated. It is, however, necessary not only to speak of it in this manner, for it is not sufficient. For this definition is obscure; and, besides this, matter is essence. For, if matter is not essence, what else is will escape detection: since, other things* being taken away, nothing else *appears* to remain. For other things are the participated properties, productions, and powers of bodies; but length, breadth, and depth, are certain quantities, and not essences. For quantity is not essence, but rather that in which these very things are primarily inherent, that is, essence. But, indeed, length, breadth, and depth, being taken away, we see that nothing remains except that which is defined by these. So that, to those who thus consider the affair, matter alone must necessarily appear to be essence. But I mean by matter, that which of itself is neither called essence †

nor

* i. e. Quantities, qualities, hardness, softness, &c.

† The following account of matter, principally collected from the writings of Plotinus, as it perfectly accords with, and at the same time illustrates, what is here said by Aristotle respecting this last and most obscure of all things, will doubtless be acceptable to the truly philosophical reader.

That it is necessary there should be some general subject in bodies, the receptacle of every form, is sufficiently evinced by the continual mutations of corporeal qualities; since nothing that is transmuted is entirely destroyed, and no being is produced from that which does not exist. Hence a change arises from the departure of one quality and the accession of another; the subject matter always remaining, which receives a constant succession of generative forms. This general subject, which is called the first matter, in order to distinguish it from that matter which is the object of sense, has the same proportion to whatever is fashioned from it, as silence to sound, as darkness to light, and as body rude and mishapen to some artificial form which it may afterwards possess. Thus the formless air admits the harmony of sound; and thus darkness, which

nor quantity, nor any one of those things by which being is defined. For there is something of which each of these is predicated, and from which being

which is neither suffused with colour nor diversified with form, becomes the subject of both. And as body, considered mathematically, is bounded by superficies, which possessing only length and breadth cannot be body; so body, considered physically, or with respect to its internal constitution, is every where bounded in the supreme part of its essence, by form, and in the lowest part by matter, which is no longer a composite, but is entirely denuded of form. For as, in an ascending series of causes, it is necessary to arrive at something which is the first cause of all, and which even transcends every perfection of being; so, in a descending series of subjects, it is equally necessary to stop at some general subject, the lowest in the order of things, and of which every perfection of being is denied.

Form, therefore, respects the quality and figure of bodies, and matter pertains to the subject; and this because it is destitute of form, and without bound. This general receptacle, then, which is said to be void of quality, cannot be body. For, since it is necessary simply to refer matter to all things, we must not attribute to it according to its nature any thing which is perceived in the genera of sensible beings. Hence, besides denying to matter other qualities, such as colours, heat and cold, we must neither ascribe to it levity nor gravity, neither rarity nor density, neither figure nor magnitude. For magnitude itself is different from the subject which is great, and figure itself cannot be the same with that which is figured. And matter can then only be void of all form, when it is considered as nothing composite, but as simple and one. But it may be asked, after what manner we can apprehend a thing which is destitute of magnitude? Shall we say, In the same manner as we perceive the indefinite itself? For, if similitude is in a certain respect apprehended by the similar, the indefinite must be perceived by the indefinite itself. Reason, indeed, by a discursive procession round the indefinite may become defined; but the intuition of the indefinite becomes an indefinite perception. Hence the phantasm of matter is not legitimate, but spurious; for, as Plato says, matter is only to be perceived by an adulterated reason. In short, what darkness, the subject of all visible colours, is to the eye, that matter is to the soul; so that the soul, by abstracting whatever in the genera of sensible beings is, as it were, of a luminous nature, and being incapable of bounding what remains, becomes similar to the eye fixed in the depths of darkness. But is the formless nature of matter by this mean perceived? Perhaps it is beheld as something destitute of figure, colour, and light; as possessing no magnitude, and bounded by no form. Nor must we suppose that, when the soul understands nothing, she is affected in the same manner as when she beholds the darkness of matter. For, when she understands nothing, she affirms nothing, or rather is passive to nothing; but her perception of a formless subject is dark and shadowy. When, therefore, in any composite substance, she receives the subject together with its inherent properties, if she analyses and separates the attendant forms and qualities, she slenderly perceives as something slender the residue which reason leaves, beholds obscurity obscurely, and understands as it were without intellection. And because matter itself is never destitute of form, but continually receives a variety of supervening forms, hence the soul quickly invests it with form, not enduring any longer its dark infinity, as if fearing lest it should rush beyond the order of things, and impatient of longer abode in the region of perfect non-entity.

being and each of the predication are different. For the rest are predicated of essence; but this of matter. So that the last of all things is of itself neither essence,

This being the case, matter is incorporeal; for body is something posterior and a composite, and form, in conjunction with something else, makes body. For thus it is allotted the same appellation according to an incorporeal genus, because both being and matter are different from bodies. But, since matter is neither soul, nor intellect, nor form, nor reason, nor bound (for it is a certain infinity), nor power (for, what can it do?), but falls below all these, neither can it properly receive the appellation of being, but may be justly called non-being. Yet not as motion is non-being, or rest is non-being, but it is true non-entity, the image and phantasm of bulk, and the desire of subsistence; abiding, indeed, yet not in permanency, of itself invisible, and flying from him who wishes to perceive it. Likewise, when some one does not perceive it, then it is passing into existence, but is not seen by him who strives to behold it. In itself, too, contraries always appear; the small and the great, the less and the more, the deficient and the transcendent. So that it is an image, neither able to abide, nor yet to fly away. For neither has it power even to effect this, since it received no strength from intellect, but was generated in the defect of all being. Hence, whatever it announces itself to be is false; so that, if it appears to be something great, it is small; if something more, it is less; and the being which presents itself in the imagination of it is non-being. It is, therefore, as it were, a flying mockery; and, in consequence of this, whatever appears to be generated in it is itself a mockery, being nothing more in reality than an image in an image; just as with respect to a mirror, where a thing itself is situated in one place, and its resemblance in another, and which is apparently filled, and is apparently all things, yet possesses nothing. But the things which enter into and depart from matter are imitations and resemblances of beings, flowing about a formless resemblance; and in consequence of becoming visible through its formless nature, they appear indeed to effect something in it, but effect nothing. For they are evanescent and imbecil, and have no repercussive power. And as this also is the case with matter, they pervade without dividing it, like images in water, or as if any one should introduce forms into that which is called a vacuum. Indeed, if the things beheld in matter were such as the forms whence they are derived, it might be said that matter is passive to their reception. But now since the things which are represented are different from those which are seen in its dark receptacle, we may from hence also learn that its passion is false, since that which is seen within is false, and possesses no similitude to that whence it originates. As these representations, therefore, are imbecil and false, and fall into that which is false, so as to resemble images in water, or in a mirror, or a dream, they necessarily permit matter to remain impassive; though, in the particulars just now adduced, there is a certain similitude, in the phantasms beheld within, to their originals.

In short, as Simplicius well observes (in Arist. Phys. p. 50, b.), matter, according to the Pythagoreans and Plato, is nothing else than the permutation and vicissitude of sensible forms, with respect to intelligibles; since from thence they verge downwards and extend to perfect non-entity, or the last of things—that is, to matter itself. Hence, says he, because dregs and matter are always the last of things, the Egyptians assert that matter, which they enigmatically denominate water, is the dregs of the first life, subsisting as a certain mire or mud, the receptacle of generated and sensible natures; and which is not any definite form, but a certain constitution of subsistence,

essence, nor quantity, nor any thing else; nor yet negations: for these also subsist according to accident. From these considerations, therefore, matter appears

existence, in the same manner as that which is indivisible, immaterial, and true being, is a constitution of an intelligible nature.

Such then being the true condition of matter, and such the shadowy nature of the forms which she contains, Plotinus * beautifully observes that *being*, properly so called, is neither body, nor is subject to corporeal affections; but body and its properties belong to the region of non-entity. But you will ask (says he), How is it possible that visible matter should possess no real being; that matter which contains stones and mountains, the solid earth, and bodies which mutually resist; since bodies which impel each other confess by their collision the reality of their existence? You will likewise ask, After what manner things which neither strike against nor resist each other; which neither externally act, nor internally suffer, nor are in any respect the objects of sight, viz. soul and intellect, are to be reckoned true and real beings? We reply, That, on the contrary, things more corpulent are more sluggish and inert, as is evident in bulky masses of earth; but whatever is less ponderous is more moveable, and alert, and the more elevated the more moveable. Hence fire, the most moveable of all the elements, flies in a manner from a corporeal nature. Besides, as it appears to me, whatever is more sufficient to itself disturbs others less, and brings less inconvenience: but such things as are more ponderous and terrene, unable from their defect of being to raise themselves on high, and becoming debile and languid, strike and oppress surrounding bodies by their falling ruin and sluggish weight;—since it is evident that bodies destitute of life fall with molestation on any proximate substance, and more vehemently impel and pain whatever is endued with sense. On the contrary, animated beings, as participating more of entity, by how much the more of being they possess, by so much the more innoxiously they impinge on their neighbouring bodies. Hence motion, which is a kind of life, or soul, or an imitation of life in bodies, is more present with whatever is less corpulent; as if more of body was necessarily produced where a defect of being happens in a greater degree.

Again: it will more manifestly appear from passivity, that whatever is more corpulent is more passive; earth in a greater degree than the other elements; and the rest in a similar proportion. For some things, when divided, suddenly return to their former union, when no obstacle prevents their conjunction; but, from the section of a terrene body, the divided portions always remain separate, as if destitute of natural vigour, and without any inherent desire of union and consent. Hence they are ready, by every trifling impulse, to remain as they are impelled; to rush from the embraces of bound, and hasten into multitude and non-entity. So that, whatever becomes corporeal in an eminent degree, as rapidly falling into non-entity, has but little power of recalling itself into one. And on this account ponderous, and, at the same time, vehement concussions are attended with ruin, when by mutual rushing one thing impels another. But when debility falls on debility, the one is valid against the other, in the same manner as non-entity rushing on non-entity. And this we think a sufficient confutation of their opinion, who only place being in the genus of body, persuaded by the testimony of impulses and concussions, and the phantasms perceived through the senses, which testify that sense is alone the standard of

* Ennead. 3. lib. 6.

truth,

appears to be essence. It is, however, impossible: for a separate subsistence, and subsisting as this particular thing, appear especially to belong to essence. Hence form, and that which subsists from both, appear to be more essence than matter. That essence, therefore, which subsists from both (I mean from matter and form) must be omitted: for it is posterior and manifest. Matter also is in a certain respect manifest*. But let us consider respecting the third †; for this is most dubious: and as it is acknowledged that there are certain essences of sensibles, let us make our first inquiry in these.

CHAPTER IV.

SINCE, then, in the beginning of this book, we have shown in how many ways we divide essence, and one of these is the very nature of a thing, let us contemplate this. For it is very advantageous to pass on to that which is more known. For thus all men acquire discipline, by proceeding through things less known to nature ‡, to such as are more known. And as in practical affairs it is requisite from those things which are good to some one to effect such as are altogether good, and the good of every one; so, from things more known to every one, those things which are known to nature and to some one are to be made known. But things which are known to individuals, and such things as are first to these, are often but little known, and have little or nothing of being. At the same time, however, from things which are known in a depraved manner, but are known to some individual, we should endeavour to know things which are altogether known, proceeding as we have before said through these very things themselves.

truth. Such as these are affected in a manner similar to those in a dream, who imagine that the perceptions of sleep are true. For sense is alone the employment of the dormant soul: since as much of the soul as is merged in body, so much of it sleeps. But true elevation and true vigilance consist in a resurrection from, and not with, the dull mass of body. For indeed a resurrection with body is only a transmigration from sleep to sleep, and from dream to dream, like a man passing in the dark from bed to bed. But that elevation is perfectly true, which entirely rises from the dead weight of bodies: for these, possessing a nature repugnant to soul, possess something opposite to essence. And this is further evident, from their generation and their continual flowing and decay; properties entirely foreign from the nature of being, substantial and real.

* That is to say, it is manifest by analogy.

† Viz. Form.

‡ Particulars are less known to nature, i. e. have naturally less of the splendor of truth.

And

And in the first place, we shall say something respecting them logically. The very nature of a thing *, therefore, is that which a thing is said to be essentially. For your essence does not consist in being a musician; since you are not a musician according to yourself. Yet, not every thing which is essentially present to a thing is the very nature of that thing. For this is not the case with that which is so essentially present as a white superficies, because the being of a superficies is not the same as the being of whiteness. But neither is that which is composed from both, viz. the essence of a white superficies, the same as the essence of superficies. Should it be asked, Why is it not? we reply, Because superficies is contained in the definition of a white superficies. Hence, that is a definition signifying the very nature of a thing, in which the thing defined is not inherent. So that, if the being of a white superficies is the being of a smooth superficies, the being of white and smooth is one and the same. But since there are also composites according to the other categories (for there is a certain subject to each, as, for instance, to quality, to quantity, to when, where, and to motion), let us consider whether there is a definition of the very nature of each of them, and whether the very nature of a thing is present with these; as, for instance, what the very nature is of a white man. But let his name be garment. What then is the being of a garment? But, indeed, neither is this among the number of things which are predicated essentially. Or shall we say, that a thing which is not essential is predicated in a twofold respect? and that of this, one thing is from addition, but another not? For one thing is said to be that which is defined, because it is added to another thing; as, if any one defining the being white should assume the definition of man: but another thing is so denominated, because something else is not added to it; as, if a garment signifies a white man, but some one should define the garment as white. A white man, there-

* *The very nature of a thing*: is the original *το τι ην ειναι*. The following is part of the comment of Alexander Aphrodisiensis on these words: "Aristotle calls *το τι ην ειναι* a thing itself, and its conjoined nature which is at the same time understood, and which is signified by its name. For man is a name signifying the very nature of the thing which is signified by the name man." And shortly after he adds: "But definition is a conception, according to Aristotle, arising from explaining and enumerating the parts from which form consists. The *το τι ην ειναι*, therefore, differs from definition in this, that it is a certain confused intellection, and, as it were, expression, and which contemplates a thing as one; but definition is a certain unfolding of a thing, and a narration of its parts." This *το τι ην ειναι* was called by the schoolmen *quidditas*, *quiddity*.

fore,

fore, in this case is something white, yet his very nature does not consist in being white, but in being a garment.

Is there then, in short, such a thing as the very nature of beings, or not? For the very nature of a thing is the essence of that thing. But, when one thing is predicated of another, it is not properly *this particular thing*; as, a white man is not *this particular thing*, if the being *this particular thing* belongs to essences only. So that the very nature of a thing pertains to those things the discourse respecting which is a definition. But not every discourse which signifies the same thing as a name is a definition (since if this were the case all discourses would be definitions: for name will be the same with any discourse whatever; so that the word Iliad will be a definition): but a discourse is then a definition when it is of some first thing. But things of this kind are such as are denominated, not from one thing being predicated of another. The very nature of a thing, therefore, does not belong to any thing besides the species of genus, but to these alone. For these appear to be predicated, not through participation, and passion, nor as accident, but there will be a discourse of each thing; and it will signify something of other things, if it is a name; I mean, that this thing is inherent in this, or, instead of a simple assertion, is more accurate: but it will not be definition, nor the very nature of a thing. Or shall we say that definition, as well as the essence of a thing, is predicated multifariously? For the inquiry what a thing is, in one way, signifies essence, and this particular thing; but, in another, each of the categories, viz. quantity and quality, and the rest of this kind. For, as the inquiry what a thing is, belongs to all things, though not in a similar manner, but to one thing primarily, and to others in a consequent order; in like manner definition, *simply* indeed, pertains to essence, but *in a certain respect* to other things. For we may ask what quality is; so that quality is of things to which the inquiry what they are, belongs; yet not simply, but just as of non-entity: some, logically arguing, say that it *is* non-entity, yet do not simply assert that it *is*, but that it is non-entity: so also with respect to quality.

It is requisite, therefore, to consider how we ought to speak respecting each, yet not more than in what manner each subsists. Hence, now also, since that which is asserted is manifest, *the very nature of a thing* in a similar manner will be primarily and simply inherent in essence, and afterwards in other things, just as in the inquiry what a thing is. So that *the very nature of a thing* will subsist with the addition of quality or quantity. For it is requisite to assert, that

that these things are beings, either equivocally, or with addition and ablation, in the same manner as that which is not the object of scientific knowledge, is scientifically known; since it is right neither to speak of these equivocally, nor after the same manner: just as with respect to the medicinal art, which is predicated with relation to one and the same thing, without being one and the same, and yet is not equivocally predicated. For no medicinal body is called a work and an apparatus, neither equivocally, nor according to one thing; but with relation to one thing. With respect to these things, however, it is of no consequence in what manner any one may be willing to speak of them. This, indeed, is evident, that definition primarily and simply considered, and *the very nature of a thing*, belong to essences; and in a similar manner they also belong to other things, though not primarily. For, though it should be admitted that any name has the same signification with a discourse, yet it does not necessarily follow, that a discourse about that which the name signifies is a definition; but this will take place when a name has the same signification with a certain discourse. This, however, happens, if it is of one thing, not by continuation as the Iliad, or such things as are one by conjunction, but if it is multifariously predicated as one thing. But unity is predicated in as many ways as being; and being partly signifies substance, partly quantity, and partly quality. Hence there will be a certain discourse about, and definition of, a white man; and after another manner, of that also which is white, and of essence.

C H A P. V.

A DOUBT, however, arises, If any one should deny that definition is a discourse subsisting from addition, of what will the definition be of things not simple but conjoined? For it is necessary that they should be rendered manifest from addition. But, I say, for instance, there is nose, and concavity, and flatness, and * that which is denominated from both †, because this is inherent in that, and neither concavity nor flatness is an accidental, but an essential, property of the nose; nor do they subsist as whiteness in Callias or man, because Callias is white who happens to be a man; but they subsist as the male in animal, and the equal in quantity, and in the same manner as all such things.

* Instead of το ἐκ τῶν δύο, the sense requires καὶ τὸ ἐκ τῶν δύο, &c.

† i. e. From nose and flatness.

as are said to be essentially inherent. But these are things in which either the definition or the name of which this is the property is inherent, and which cannot be manifested separately, in the same manner as whiteness can be manifested without man; but the feminine cannot be rendered apparent without animal. So that the very nature and definition of these are either of nothing, or, if there is a definition of these, it is in the manner we have previously related.

There is also another doubt respecting these things: for, if a flat nose and a concave nose are the same, the flat and the concave will be the same: but if not, because it is impossible to use the word flat-nose, without the thing of which it is an essential property, and flatness of nose is a hollowness in the nose, either it is not possible to say a flat nose, or the same thing will be said twice, *i. e.* nose, concave nose: for a flat nose will be a concave nose. Hence, it is absurd, that the essential should be inherent in things of this kind: for, if it were *, there would be a progression to infinity; since in nose, concave nose, something else essential would be inherent. It is evident, therefore, that definition is of essence alone. For, if it were also of the other categories, it must necessarily be from addition, as, for instance, in the definitions of quality and the odd. For it is not framed without number; nor the definition of feminine without animal. But I say, that those definitions are composed from addition, in which the same thing happens to be said twice, as in these: but if this be true, neither will there be definitions of things conjoined, as, for instance, of an odd number. However, they do not perceive that the definitions of these things are not accurately assigned by them. But if there are also definitions of these things, they are either after a different manner, or, as we have said, definition and the very nature of a thing have a manifold subsistence. So that in one respect definition and essence will not be inherent in any one of these except essences, and in another respect they will be inherent. That definition, therefore, is a description of the very nature of a thing, and that the very nature of a thing either alone belongs to essences, or especially, both primarily and simply, is evident.

* The original here has erroneously *α δ α*, instead of *α δ*. That it is an error is evident, from the sense of the passage, and the text of Alexander.

C H A P. VI.

LET us now consider, whether the very nature of a thing is the same with each individual thing, or different from it. For this will very much contribute to the speculation respecting essence; since each particular thing does not appear to be different from its own essence; and the very nature of a thing is said to be the essence of that thing. But in things which are predicated according to accident, these two may appear to be different; as, for instance, a white man, and the being of a white man. For if a white man and the being of a white man were the same (for man and a white man are, as they say, the same), then, the being of a white man would be the same with the being of man separately considered. Or is it necessary, that things which subsist according to accident should be the same [as those things which have an essential subsistence]*? For the extremes do not become similarly the same. But perhaps it may appear to happen, that the extremes will become the same according to accident; as, for instance, the being of white and the being of a musician. This, however, does not appear to be the case; but in things which are essentially predicated, it is always necessary that they should be the same, as must be the case with certain essences, if there are such, to which there are no other essences, nor natures prior, such as some assert ideas to be. For, if the good itself were different from the being of good, animal from the being of animal, and being from the essence of being, there would be other essences and ideas besides those which are said to be, and those would be prior essences, if there is an essence of essence itself. And if, indeed, they are unconnected with each other, of *these* † there will not be science, and *these* ‡ will not be beings. But I mean by being unconnected with each other, if neither the being of good is inherent in good itself, nor to be good pertains to this. For a scientific knowledge of a thing is a knowledge of the very nature of that thing: and the like takes place with respect to good and other things. So that, if neither the being of good is good, neither will the essence of being be being, nor of *the one* be one; and in a similar manner, all or none of

* The words within the brackets are added from the Commentary of Alexander, because, as he justly observes, they are requisite to the completion of the sentence.

† Viz. Of man itself, horse itself, and of other ideas, there will not be science.

‡ Viz. The being of man itself, horse itself, will not be beings.

the essences of ideas have a subsistence. So that if the essence of being is not being, neither will the essence of any one of the rest.

Further still: that in which the essence of good is not inherent is not good. It is necessary, therefore, that good and the essence of good should be one; also the beautiful and the essence of the beautiful, and so of all such things as are not predicated through another, but are first natures, and have an essential subsistence. For this is sufficient if it takes place, though forms should have no subsistence, *though perhaps it is more so if they do subsist* *. At the same time it is evident, that if ideas are such things as some say they are, essence will not be as a subject to them. For it is necessary that these should be essences, and that they should not be predicated of a subject; for, if they were, they would subsist according to participation. From these reasons, therefore, it is evident that each particular itself, and the very nature of a thing, are one and the same, not according to accident; and that to have a scientific knowledge of any thing, is to know scientifically the very nature of that thing. So that, from induction it is necessary that both should be one thing. But it is not true to affirm, that a thing which is predicated according to accident, as a musician, or that which is white, is the same as the very nature of a thing itself, because that to which it happens, and the accident itself, have a twofold signification. So that in a certain respect a thing itself is the same, and in another respect is not the same, with the very nature of a thing. For the being of man is not the same thing with that of a white man; but so far as the essence of man is passive to whiteness, or is whitened, it is the same. But it may appear to be absurd also, if some one should call an individual the very nature of a thing; for there will be another very nature of a thing besides that, as, besides the essence or very nature of a horse †, there will be another very nature of a horse. Though what hinders but that now certain *essences themselves*

* If this is more true if ideas have a subsistence, there must be ideas; for Aristotle himself in the second book of this work says, "As is the being of every thing such also is its truth." For the solution of Aristotle's objections to the doctrine of Ideas, see the Notes to the thirteenth and fourteenth books.

† The demonstration of Aristotle in this place proceeds on the hypothesis of ideas. But his meaning appears to be as follows: If horse and the very nature of horse are not the same but different, let a name be given to this very nature of a horse, and let it be called garment. Since, then, every name signifies some *very nature of a thing*, the very nature of a garment will be different from the garment. Again: let the very nature of this garment be called plant; and the
very

selves in continued succession may be the same as the things of which they are the very natures, if the very nature of a thing is essence? They are, however, not only one, but the definition also of them is the same, as is evident from what has been said. For to be one, or the being of one, and one, are not one according to accident. Again: if they are different, there will be a progression to infinity. For the one, being as it were the essence of one thing, will be the very nature of that thing, but the other will be that one thing itself. So that there will be the same definition of them. That in things first, therefore, and such as are essentially predicated, the essence of a thing, and the thing itself, are one and the same, is evident. But it is also evident, that sophistic arguments against this position are solved by the same solution. For the sophists inquire, Whether Socrates is the same with the essence of Socrates? For there is no difference with respect to the things from which the interrogation may be made, nor those which may be employed by him who solves the question. We have, therefore, shown, after what manner the very nature of a thing is the same, and in what respect it is not the same with any particular thing.

C H A P. VII.

OF things which are generated, some are produced by nature, others by art, and others by chance: but all things which are generated are generated by something, and from something, and become something. But I mean that they become something according to each of the categories: for they either become substance, or quantity, or quality, or where. But natural generations are those the generation of which is from nature: and that *from which* they are generated is that which we call matter. That *by which* they are generated is some one of the things which have a natural subsistence. And that which is *some particular thing*, is man or plant, or some one of such like things which we say are especially essences. All things, indeed, which are generated either by na-

very nature of a plant will be different from plant. And if this name plant be assigned another name, it will also have another very nature different from itself, and this will be the case *ad infinitum*. If, therefore, any one gives a name to a thing, since of every word signifying essence there is a *very nature*, besides that name there will be another very nature, as, besides the very nature of a horse, there will also be another very nature. So that if there is another very nature of the very nature of a horse, there will be two natures of a horse and two essences, and not two only, but an infinite number.

ture

ture or art, have matter: for it is possible for each of them to be and not to be; which capability is the matter in each. And, in short, *nature is that from which, and that according to which*. For that which is generated has matter, as, for instance, a plant or animal: and also *that from which*, viz. Nature herself, which is predicated according to form, and is, indeed, of a similar species. But this subsists in another: for man generates man. After this manner, therefore, are things generated generated through nature. But other generations are called *makings*. All *makings*, however, are, either from art, or from power, or the dianoëtic part. But of these some are also generated from chance and fortune, just as in things which are generated by nature. For there, also, some things are generated the same, both from seed, and without seed. Concerning these things, however, we shall consider hereafter. But things are produced from art, the form of which is in the soul. But *I mean by form the very nature of every thing and the first essence*. For after a manner there is the same form* of contraries. Thus, an opposite essence is the essence of privation, as, for instance, health of disease. For the absence of health manifests disease. But health is reason in the soul and in science. Health, therefore, is produced, when the physician thus reasons:—If this is health, it is necessary that the inequality of things hot and cold should pass into equality. And if this is to be effected, it is necessary that heat should arise. In this manner he perpetually reasons, until he arrives at that which at last he is able to effect. Afterwards, that motion which now begins from this, is called the making which leads to health. So that it happens after a manner, that health is produced from health, and a house from a house, viz. that which possesses matter is produced from that which is without matter. For the medicinal art is the form of health, and the building art of the house. But I call essence without matter, the very nature of a thing.

Moreover, of generations and motions this is called intellection, and that making. That, indeed, which begins from the principle and form is intellection; but that which commences from the end of intellection is making. In like manner, each particular thing is produced in other things which subsist as mediums. I say, for instance, if health is to be restored, it is necessary that a reduction to equality should take place. And this will be effected if heat is introduced. And what is this? It is this particular thing. But this particu-

* Because form gives subsistence to beings, and is the cause that privations are numbered among beings.

lar

lar thing subsists in capacity. And this is now placed in the power of the physician. That which makes, therefore, and that whence the motion of restoring health begins, if it is from art, is form in the soul; but if from chance, it begins from that which is finally the principle of making to him who makes according to art: as also in healing, the principle perhaps is from imparting heat; but this is accomplished by friction. Heat, therefore, in the body, is either a part of health, or some such thing which is a part of health follows it either immediately, or through many mediums. But this which makes is the last, and is in such a manner a part of health, as stones are parts of a house, or other things of something else. So that, as it is said, it is impossible for any thing to be generated, if nothing pre-exists. That a part, therefore, exists from necessity is evident: for matter is a part, since it has an inherent subsistence, and is itself generated. But does it rank among things which belong to definition? Indeed, in both respects, we assert what many circles are; and speaking of the matter, we say it is brass; and of the form, that it is such a figure: and this is the genus in which it is first placed. But a circle of brass contains matter in its definition. Some things, however, when they are produced, are not called that from which they are produced as from matter, but are called something of that kind; as a statue is not called a stone, but stony. But a man who is recovering his health is not called that from which he recovers his health. But the cause of this is, that they are generated from privation, and a subject which we call matter. Thus, for instance, both man and he who is sick are made well. Yet, health is rather said to be produced from privation, as, for instance, from him who is sick, than from man. Hence, he who is healthy is not said to be tending to sickness; but this is said of man, and man in health. But with respect to things of which the privation is uncertain and nameless, as in the brass of any figure, or in the tiles or wood of a house, those things appear to be generated from these, as, in the former instance, from him who is tending to sickness. Hence, as, there, that which is produced is not called by the name of that from which it is produced; so neither here is the statue called wood, but derivatively wooden; brazen, and not brass; stony, and not stone. The house also is not called tiles (*plinthoi*), but plinthine*. For, if any one attentively considers, he will not simply say that the statue is made from wood, or the house from tiles; because it is requisite

* This word is a derivative from tiles, in the same manner as brazen from brass.

that

that whatever is generated from any thing should be changed from that from which it is generated, and should no longer remain that which it was before. On this account, therefore, it is thus denominated.

C H A P. VIII.

SINCE that which is generated is generated by something (but I call this that whence the principle of generation is derived) and from something; let this not be privation but matter (for the manner in which we denominate this has been already defined). There is also that which is generated; but this is either a sphere or circle, or whatever else may casually present itself. [*Moreover, as that whence the principle of motion is derived] neither makes the subject, I mean the brass itself, so neither does it make the sphere, unless from accident, *i. e.* because a brazen sphere is a sphere; but the sphere itself it does not make. For, to make this particular thing, is to make it this particular thing from the whole subject. I say, for instance, that to make the brass round, is not to make the round, or the sphere, but something else, viz. this form in another thing. For, if it makes, it will make from something else: for this was supposed; as, for instance, to make a brazen sphere. But this he thus makes, because, from this which is brass, he makes this which is a sphere. If, therefore, he also makes this very thing itself, it is evident that he makes in a similar manner, and the generations will proceed to infinity †. It is evident, therefore, that neither is *species* (or by whatever other name it may be proper to call the *form* in sensibles) generated, nor is it that which is the very nature of a thing. For it is generated in another, either from art, or from nature, or from capacity. But the efficient cause makes the sphere to be brazen: for it makes from brass and sphere. For in this it makes this form; and this is a brazen sphere.

* The words within the brackets are omitted in the printed text, but are supplied from the text of Alexander.

† As he who makes a brazen sphere, makes it to be this composite sphere from brass; so, if it were possible to make the form and very nature itself of a sphere, it must be made from some subject: and therefore, this form being itself a composite from matter and form, that form also would require to be generated; and so the generations would proceed to infinity. Hence, the form which is produced in a sensible subject is not introduced through generation, but is ingenerated in it, in a point of time and an indivisible moment. And this instantaneous union of form with matter imitates the at-once-collected and eternal procession of all things from the ineffable principle of all.

But,

But, in short, if there is a generation of the essence of a sphere, it will be from a certain something. For it will be requisite that that which is generated should always be divisible*, and that this should be one thing, and that another; I mean, that this should be matter, and that form. But, if a sphere is a figure equal from the middle, of this, one part will be that in which the production of the efficient will be inherent; but the other, that which will be inherent in this part†; but the whole will be that which is effected, as, for instance, the brazen sphere. It is evident, therefore, from what has been said, that that which is denominated as form, or as essence, is not generated; but that the concurrence‡ which is said to take place according to this, is generated: also, that in every thing which is generated matter is inherent; and that one part is matter, but the other form. Is there, then, any sphere besides these, or house, besides tiles? Or shall we say that, if this were the case, *this particular thing*§ would never have been generated, but because it signifies such a particular thing. This, however, is not definite, but makes and generates such a particular kind of thing from this particular; and when it is generated it is this thing with such a particular quality. But the whole of this is Callias or Socrates, just as this is a brazen sphere. But man and animal are altogether as a brazen sphere. It is evident, therefore, that forms themselves (as some are accustomed to speak of forms), if there are certain natures of this kind besides particulars, are of no use with respect to generations and essences, nor will essences essentially subsist through these. Indeed, in some things it is evident that the generator is such as the thing generated, yet is not one and the same in number, but in species, as is manifest in things physical: for man generates man, and horse horse||, unless when something contrary to nature is generated, as when a horse begets a mule. And these also are similarly affected. For that which

* Viz. Into form and a subject.

† Viz. Of this figure, one part will be the *subject*, in which the form produced by the efficient is inherent; but the other will be the *form* which is inherent in the subject.

‡ i. e. The composite from matter and form.

§ Alexander well observes, that by this particular thing (*τοῦδε τι*) Aristotle signifies sensibles, things which can be pointed out with the finger, and, in short, things which are able to subsist from themselves.

|| *Καὶ ἵππος ἵππον* is omitted in the printed text; but the sense requires it should be inserted; and it is in the text of Alexander.

is common to a horse and an ass, viz. the most proximate genus*, is not named: but both, perhaps, will be as a mule. So that it is evident, that it is not by any means necessary to introduce form as a paradigm (for, in sensibles, forms should be especially investigated, since these are especially essences), but that which generates is sufficient to make, and to be the cause of form in matter. But now the whole of such a form in these flesh and bones is Callias and Socrates; who are, indeed, different, on account of the matter (for the matter in each is different), but the same in species: for species or form is indivisible.

CHAP. IX.

BUT some one may doubt why some things are produced both by art and chance, as health; but others are not so produced, as a house. The reason, however, is this: that matter, which is the principle of generation, in making and generating something of things artificial, in which a certain part of the thing is inherent, is partly of such a nature as to be moved by itself †, and partly not; and of this, one part is capable of being moved in this particular manner, but another part is incapable of being so moved. For many things are capable of being moved by themselves, but not in this manner ‡; as, for instance, to leap. It is impossible, therefore, for things, the matter of which is of this kind, as, for instance, stones, and fire, to be thus moved, unless by something else. Hence, some things will not be, but others will be, without that which possesses art. For they will be moved by those things which do not indeed possess art, but which are able to be moved themselves, either by other things which do not possess art, or from a part. But it is evident from what has been said, that all things are after a manner generated from equivocals §, as

* By the most proximate genus Aristotle means the common nature through which the mule generates.

† Thus fire moves from itself upwards, and a stone downwards.

‡ Thus fire, which moves from itself upwards, cannot be so moved as to fuse brass from itself, but through the smith.

§ This is said of things artificial: for a house is not constructed from an existing house, in the same manner as a man from a man. A house, therefore, is in a certain respect constructed from that which is univocal, or from an univocal part. For the definition of a house is predicated of this house. But in another respect it is not constructed from that which is univocal, because there is no existing house from which it is made.

things

things which have a natural subsistence, or from an equivocal part; as, for instance, a house from a house, or from intellect. For art is form*, either from a part, or from that which possesses a certain part, if it is not produced according to accident. For the cause of making is the first essential part: for the heat which is in motion produces heat in the body. But this is either health, or a part of health; or some part of health, or health itself, follows it. Hence it is said to make, because that which follows, and to which heat happens, produces health. So that, as in syllogisms essence is the principle of all things (for syllogisms are from *the what*†), so here generations. Things also which are constituted by nature subsist in a manner similar to these. For seed makes just as the artist operates; for he possesses form in capacity, and that from which seed originates is in a certain respect univocal, unless an injury happens to take place: for it is not proper to investigate all things, as man from man; for woman is from man; and hence mule does not originate from mule. But those things are produced by chance, the matter of which, as there, is capable of being moved by itself with that motion with which seed moves. And those things the matter of which is not capable of being so moved cannot be produced in any other way than from generations. But this reasoning not only shows, respecting essence, that form is not generated, but it also in a similar manner evinces this in common of all first natures, as of quality, quantity, and the other predicaments. For, as a brazen sphere is that which is generated, and not the form of the sphere, nor the brass; for it is always necessary that matter and form should preexist; the like must be understood respecting essence, quality, quantity, and the other predicaments. For *quality* is not generated, but *such like* wood; nor quantity, but wood, or an animal of a certain dimension. However, from these things the peculiarity of essence may be apprehended, viz. that another essence which makes, having a subsistence in energy, must necessarily always preexist; as, for instance, an animal must preexist, if an animal is generated: but it is not necessary that this should be the case with quality, or quantity, except in capacity alone.

* Thus, the art through which a house is constructed, is nothing else than the form of the house.

† By *essence*, and *the what*, Aristotle in this place means axioms; for demonstrations are produced from these.

C H A P. X.

MOREOVER, since definition is a sentence, but every sentence has parts, and as a sentence is to a thing, so is a part of a sentence to a part of a thing, it is now doubted, whether it is necessary or not that the parts should be inherent in the definition of the whole. For in some things they appear to be inherent, and in others not. Thus, the definition of a circle does not contain the sections of the circle defined: but the definition of a syllable contains the parts of a syllable; though a circle is divided into sections, as a syllable into the elements of speech. Further still: if parts are prior to the whole, but an acute is a part of a right angle, and a finger of an animal, the acute will be prior to the right angle, and the finger to man. These, however, do not appear* to be prior: for wholes are introduced in the definition of parts†; and they are prior because they can subsist without parts. Or shall we say, that part is multifariously predicated? Of which one mode is that which measures according to quantity. The consideration of this, however, must be omitted: but our attention must be directed to the speculation of what those things are from which essence consists as parts. If, therefore, one thing is matter, another form, and a third that which is composed from these, and essence is matter and form, and that which consists from these, matter also is in one respect said to be a part of something, and in another is not said to be a part; but this is true of those things from which the definition of form consists. Thus, for instance, flesh is not a part of concavity (for this is matter in which concavity is generated), but it is a certain part of flatness of nose. And the brass, indeed, is a part of the whole statue; but by no means of the statue which is denominated as form. For form is predicated in every thing, and every thing is to be denominated so far as it has form. But that which is material is never to be essentially predicated. Hence, the definition of the circle does not contain the definition of its sections; but the definition of a syllable contains that of the elements from which it is composed. For the elements of speech are parts, and not the matter of form; but the sections of a circle are parts, as the matter in which the circle is produced;

* The sense requires we should read *οὐ δόκει δ' εἶναι εἶναι πρότερα*, instead of *δόκει δ' κ. τ. λ.*

† Thus, in defining an acute angle, we say that an acute angle is an angle less than a right angle. And hence a right angle or a whole is assumed in the definition of an acute angle.

yet

yet they are more proximate to form than the brass, when roundness is ingenerated in the brass. But in a certain respect neither will all the elements be contained in the definition of a syllable; as, for instance, these waxen letters, or those which are in the air*. For now these also are a part of a syllable, as sensible matter. For it does not follow, that because a line is corrupted, when divided into equal parts, or a man when divided into bones, and nerves, and flesh, that they are so composed from these as parts of essence; but it follows, that they are composed from them, as matter only. And they are, indeed, parts of the whole; but they are not parts of form, and of that which is the subject of definition: and, therefore, neither are they introduced in definitions. In some definitions, therefore, a definition of parts of this kind will be inherent; but, in others, it is necessary that it should not be inherent, unless it is the definition of both taken together. For, on this account, some things consist from these as principles, into which they are corrupted, but others do not consist from these. Such things, therefore, as are taken together, are form and matter; as a flat nose, or a brazen circle: for those, indeed, are corrupted into these, and matter is a part of them. But such things as are not assumed in conjunction with matter, but without matter, as the definitions of form alone, these are either altogether not corrupted, or at least not after this manner. So that the things which they contain, are indeed the principles and parts of them; but, of form, these are neither principles nor parts. Hence, a statue of clay is corrupted into clay, and a sphere into brass, and Callias into flesh and bones: and further still, a circle is corrupted into sections. For there is something which is assumed together with matter. For the circle is predicated equivocally, both that which is simply predicated†, and those which are taken severally‡, because those that are taken severally have not a proper name.

We have now, therefore, unfolded the truth; but at the same time it is necessary that, by making a repetition, we should speak more clearly. For such things as are the parts § of a definition, and into which definition is divided,

* For, since voice, says Alexander, is a percussive of air, when we speak, the air is, without doubt, conformed to our words.

† Viz. Universal circle.

‡ Viz. Particular circles.

§ Viz. Such things as are the parts of form; as animal and biped are parts of the form of man, and are prior to man.

these

these are prior, either all or some of them. But the definition of a right angle is not divided into the definition of an acute angle, but the definition of an acute into that of a right angle. For he who defines an acute, uses a right angle; since an acute is less than a right angle. The like takes place with respect to a circle and semicircle. For the semicircle is defined by the circle; and the finger by the whole. For a finger is such a part of the man. So that such parts as have, indeed, the relation of matter, and into which, as into matter, the whole is divided,—these are, indeed, posterior; but such as have the relation of definition, and of essence according to definition, are prior, either all or some of them.

But since the soul of animals is their form* (for this is the essence of the animated nature, an essence according to definition and form, and the very nature of such a body; for a part of any thing, if it is well defined, is not defined without its proper employment, and which here does not subsist without sense)—this being the case, the parts of soul are prior, either all or some of them, to the whole animal. And the like takes place in other things. But the body and its parts are posterior to this essence, and are divided into these as into matter. This is not the case with essence, indeed, but with the entire whole. These, therefore, are partly prior, and partly not prior, to the whole. For, when separated, they are not able to subsist. For neither is a finger according to every mode of subsistence the finger of an animal; but a dead finger is only equivocally so called. But some things perish together with the whole itself; and these, indeed, are principal parts, in which definition and essence are primarily inherent; such, for instance, as the heart, if it is this principal part, or the brain. For it is of no consequence which of these is of this kind. But man and horse, and the like, are in particulars: and universal essence does not subsist separate from the particulars to which it belongs, but a certain whole consisting from this definition and this matter† subsists as universal. But a particular, consisting from ultimate matter, is now Socrates; and in a similar manner with respect to other things.

Definition, therefore, is a part of form (but I mean by form the very nature or essence of a thing), and of the whole which is composed from form and matter. But the parts of definition are alone the parts of form; and defini-

* The text of Alexander, and indeed the sense, require that after $\psi\upsilon\chi\eta$, in the printed text, we should add $\epsilon\iota\delta\omicron\varsigma\ \alpha\upsilon\tau\omega\upsilon$.

† By the matter of man universal, Aristotle means genus and difference.

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tion is of that which is universal. For the essence of a circle and a circle are the same, and in like manner the essence of soul and soul are the same. But of that which is now a whole, as, for instance, of this circle, and, in short, of that which is a particular, or sensible, or intelligible whole (but I mean by intelligibles such things as mathematical entities, but by sensibles, such things as are composed of brass and wood); of these I say there is no definition, but they are known by intellection or sense. But when the energy ceases by which they were visible, it is not manifest whether they are or are not; nevertheless, they are always predicated and known by universal reason: but matter is of itself unknown. With respect to matter, however, one kind is sensible, and another intelligible. And sensible matter, indeed, is such as brass and wood, and whatever matter is moveable: but intelligible matter is that which subsists in sensibles, yet not so far as they are sensibles, as, for instance, mathematical entities. We have, therefore, shown in what manner this takes place respecting whole and part, and also respecting prior and posterior.

But it is necessary to answer the interrogation, when any one asks, Whether a right angle, a circle, and an animal, are prior to the parts into which they may be divided, or whether the parts from which these are composed are prior to their wholes? And we must reply, That part is not simply predicated*. For, if soul is the animal, or that which is animated, or every animal is its own soul; and in like manner, if the circle is the essence of the circle, and the right angle of the right angle, what part is each of these, and to what whole must we say it is posterior? For instance, of those parts which are in a definition, which should we say is posterior to the whole, viz. to the whole of a certain right angle? For both the angle of brass which subsists in conjunction with matter is a right angle, and that also contained in lines which subsist as particulars. But the right angle which is without matter, is posterior to the parts which are contained in definition, but is prior to the parts which subsist as particulars. It must not, however, be said that this is true of part simply considered. But if soul is something else, and not the animal, thus also some parts must be said to be prior, and others not prior, as we have already observed.

* Aristotle here, with wonderful brevity, says nothing more than *οτι ουχ. απλως.*

CHAP.

C H A P. XI.

IT may justly be doubted what the quality is of the parts of form, and also of the parts of that which is a composite; since, this not being manifest, it is not possible to define every particular. For definition is of that which is universal, and of form. If, therefore, it is not apparent which of the parts have the relation of matter, and which have not, neither will the definition of the thing be manifest. Such things, therefore, as are ingenerated in different species, as, for instance, a circle in brass, in stone, and in wood, these appear indeed to be manifest, since neither the brass nor the stone is any thing of the essence of the circle, because it is separated from them. But such things as are not perceived to be separated* are not in any respect prevented from subsisting similar to these; just as, if all circles were of brass, brass would appear to be of the essence of the circle, yet, nevertheless, brass would not then be a part of form. Nevertheless it is difficult to separate this in our dianoëtic part. For the form of man always appears in flesh and bones, and such-like parts. Whether, therefore, are these parts of form and definition? or, are they by no means parts, but matter? However, as the form of man is not ingenerated in another, it is impossible to separate it. But since this appears to happen, and it is immanifest when, some† also have taken occasion to doubt respecting the circle and triangle, as if it did not pertain to lines and to continued quantity to be defined; but all these were similarly predicated, as the flesh or bones of a man, and brass and stone of a circle. They likewise refer all things to number, and say that the definition of a line is that of the duad.

Of those also who assert that there are ideas, some say, that line itself is the duad, but others the form of line. For, in some things, say they, form and that of which it is the form are the same, as, for instance, the duad and the form of the duad. But this is not the case in a line. It happens, therefore, that there is one form of many things of which the species appears to be different; which thing likewise happens to the Pythagoreans. The consequence also will be that there will be one form only of all things, and that other things will not be forms; though, after this manner, all things will be

* Thus, man considered as united with bone, flesh, and nerves, cannot be considered separate from these, as the circle can be from brass and wood.

† Alexander informs us, that Aristotle here alludes to the Pythagoreans.

one.

one. We have shown, therefore, that the particulars respecting definition are connected with a certain doubt, and likewise through what cause this takes place. Hence, to refer all things after this manner, and to take away matter, is superfluous. For in some things, perhaps, *this* is in *that* *, or this thing thus subsisting. And that is not a good comparison respecting an animal, which the junior Socrates † was accustomed to adduce. For it leads us from the truth, and causes us to apprehend that it may be possible for man to subsist without parts, in the same manner as the circle without brass. The latter instance, however, is not similar to the former: for animal, perhaps, is something sensible, and cannot be defined without motion; and therefore neither without its parts subsisting after a certain manner. For the hand is not in every respect a part of man, but that which is able to accomplish the proper office of the hand. So that it is a part when animated; but, when not animated, it is not a part.

But, with respect to mathematical entities, why are not definitions parts of definitions? For instance, why are not semicircles parts of the definition of a circle? For these are not sensibles. Shall we say this is of no consequence? For they will be the matter of certain things, and of such as are not sensible, and of every thing which is not the very nature of a thing. These, therefore, will not be parts of universal circle, but of particulars, as we have before said. For, of matter, one kind is sensible, and another intelligible. But it is manifest that soul is the first essence, but body, matter; and man or animal is that which is composed from both as universal. But Socrates or Coriscus, if soul is the form of each, is two-fold. For some call Socrates as soul, but others as a whole. But if simply this soul, and this body, they will have the relation of universal and particular. Whether, however, besides the matter of such like essences, there is some other essence, and whether it is proper to investigate a certain other essence of these, as, for instance, number, or something of this kind, must be a posterior consideration ‡. Indeed, for the sake of this we endeavour to define respecting sensible essences; since, after a manner, the speculation of sensible essences is the business of natural and the second philosophy. For the natural philosopher ought not only to have a

* Viz. Form is in matter.

† Who this junior Socrates was is uncertain.

‡ See the Notes to the fourteenth book.

A a

knowledge

knowledge of matter, but much more of that essence which subsists according to definition. However, with respect to definitions, how those things are parts which are assumed in definition, and why definition is one reason (for it is evident that the thing is one, and a thing possessing parts is one definite particular); this must be considered afterwards. We have, therefore, shown what the very nature of a thing is universally, and how itself subsists by itself: likewise on what account the definition of the very nature of some things contains the parts of that which is defined; but in other things this is not the case: and also that, in the definition of essence, those parts which subsist as matter are not inherent; for they are not parts of that essence, but the whole. But of this in a certain respect there both is and is not definition. For with matter there is not a definition (since it is indefinite); but according to the first essence there is. Thus, the definition of man is the definition of soul. For essence is the inherent form, from which and matter the whole essence is denominated; as, for instance, concavity. For, from this and nose, a flat nose and flatness of nose are composed. For nose is twice inherent in these. But in the whole essence, as in a flat nose, or Callias, matter also is inherent. We have also shown that *the very nature of a thing, and each particular thing*, are in some things the same, as in first essences. Thus, for instance, curvature is the same with the essence of curvature, if it is the first. But I mean by first, that which is not denominated, because one thing is inherent in another, and is in a subject as matter. But in things which subsist as matter, or as assumed together with matter, these are not the same; nor in things which are one according to accident, as Socrates and a musician; for these are the same according to accident.

CHAPTER XII.

It is now requisite, in the first place, that we should discuss what we have omitted in our Analytics * respecting definition. For a doubt which was not there dissolved will conduce to the discourse respecting essence. But the doubt is this: Why that which is defined, of which we say the reason is definition, is one thing? For instance, if the definition of man is a biped animal (for let this be his definition), why is this one thing, and not many, animal

* Aristotle here alludes to the second book of his Last Analytics.

and

and biped? For man and white are indeed many things, when the one is not inherent in the other. But when the one is inherent in the other, and the subject, viz. man, is affected with something, they are one. For then a white man becomes and is one thing. But here the one does not participate of the other. For genus does not appear to participate of differences; since, at the same time, the same thing would participate of contraries. For differences are contraries, in which the genus is different. But if it does participate*, the same reasoning will take place, if the differences are many, as capable of walking, biped, and without wings. For, why are these one, and not many? [It cannot be, that they are one because they are inherent†]. For thus there will be one from all. But such things as are contained in definition‡ ought to

* In this sentence, says Alexander, much is wanting; but (he adds) from what Aristotle adduces, I suspect his meaning to be as follows: "If any one should say that genus does not participate of contrary differences, but of capable of walking, biped, and without wings, the same reasoning will recur. For, if there are many differences, why are these one thing, and not many things? If they ought to be called one, because they are inherent in genus; for the same reason, every thing in which certain things are inherent will be one with the inherent particulars. Hence, wine, and the vessel which contains it, will be one; and also a bushel, and grains of wheat. Moreover, if animal, capable of walking, biped, and without wings, are one thing, because these are inherent in animal, it follows, that animal will be one with all differences, and so all things will be one."

† The words within the brackets are omitted in the printed text. It is evident, however, both from the text of Alexander, and the version of Bessarion, that they ought to be inserted. It appears, therefore, that there is wanting in the Greek *ου γαρ εν οτι υπαρχη*.

‡ It is well observed by Alexander, that Aristotle subjoins a very obscure solution of this question, because he has solved the same in his second book *On the Soul*: and that in this place, though after much discussion he has, without doubt, solved it, yet he does not appear to have solved it.

Alexander then gives us the following solution of it: "A sphere in brass is nothing else than spheric brass; and the brass is as matter, but the rotundity as form. Moreover, matter and form are naturally adapted to be one, when nothing impedes their conjunction. For in this the very essence of matter and form consists, that when there is matter, and the form which it is able to receive is present, they are immediately united, and become one thing. And as this is the case with these, so also in natural things, viz. in genus and differences. For, if I rightly remember, Aristotle, in his book *On Demonstration* (viz. his *Last Analytics*), testifies that all differences, except the ultimate difference, together with genus, possess something similar to matter; but that the ultimate difference is form. Thus, for instance, animal partaking of reason is the matter of the human form; as is also mortal animal partaking of reason: but capable of intellect and learning is the form of man. And, because form and matter are naturally adapted

to be one. For definition is one particular reason and essence; so that it is necessary that it should be the definition of one certain thing. For essence, as we say, signifies one particular thing, and this definite thing.

It is requisite, however, in the first place, to consider respecting those definitions which subsist through divisions. For there is nothing else in definition than the genus which is called first, and difference*. But other things are genera, both that which is first, and together with it the assumed differences. Thus, for instance, the first genus is animal; but that which is consequent to this is animal biped; and again animal biped, and without wings. And the like consequence will ensue, if there is a greater multitude in the definition. And, in short, there is no difference, whether it subsists through many things, or through few things, or through two things. But if through two things, the one will be genus, and the other difference. Thus, for instance, of biped animal, animal is the genus, but the other is difference. If, therefore genus, simply considered, is not any thing separate from its own species, or if it is, indeed, yet it is as matter (for voice is genus and matter; but differences make forms and elements from this). This being the case, it is evident that definition is a sentence composed from differences. But it is also requisite that difference should be divided into its differences. Thus, for instance, the difference of animal is the possession of feet. Again: it is requisite to know the difference of animal possessing feet, so far as possessing feet. So that we must not say of things possessing feet, one is winged, and another without wings, if we wish to speak accurately; but he will do this who is unable to divide properly: but we should say, that one has fissured feet, and another feet without a fissure. For these are the differences of feet, since the fissure of the feet is a difference of feet. And thus we must always divide, till we arrive at things without difference. But then there will be as many species of foot as there are differences, and the number of animals with feet will be equal to their differences. If, therefore, this be the case, it is

to be one, hence these are one. But that the ultimate difference is form, and those which precede matter, Aristotle himself will shortly explain. After the same manner, animal capable of walking is matter, but biped form."

* It is also well observed by Alexander in this place, that the word *last* must be here understood. So that the sense will be, that in definition there is nothing else than first genus, and ultimate difference; or, in other words, these constitute definition, and that which is explained by it.

evident

evident that the last difference will be the essence and definition of a thing, if it is not necessary often to assert the same things in definitions; for it is superfluous. Nevertheless, this sometimes happens. For, when any one says an animal having feet, and a biped, he says nothing else than this, an animal having feet, and having two feet. And if he divides this by a proper division, he will often say the same thing, and as often as the number of differences. If, therefore, a difference is produced of difference, one, which is the last, will be form and essence. But if the division is made according to accident, as, if in a division of things having feet, it should be said, one is white and another black, there will be as many differences as there are divisions. So that it is evident that definition is a sentence composed from things different, and from the last of these, when it is properly framed. But this will be manifest if any one transposes such definitions, as, for instance, the definition of a man, and says, animal biped, having feet. For, having said he is biped, renders the addition of having feet superfluous. But there is no order* in essence. For in what manner is it requisite to understand *this* as posterior, and *that* as prior? Thus much, therefore, we have in the first place said respecting the quality of definitions which subsist through division.

C H A P. XIII.

SINCE, however, our speculation is respecting essence, let us again return to this. As, therefore, a subject, the very nature of a thing, and that which is composed from these, are each of them said to be essence, in like manner that which is universal is called essence. Concerning two of them, therefore, we have already spoken. For we have spoken respecting the very nature of a thing, and also of a subject, which we have said is subjected in a twofold manner, either as this particular thing, as an animal to passions (*i. e.* participated properties), or as matter to energy. Universal also to some appears to be especially a cause and principle. On which account it is necessary that we should also make this the subject of discussion. For it seems to be impossible that essence should be any thing of universals: for the first essence of every thing is that which does not belong to another thing†; but that which is

* Thus, in the brass of a statue, so far as brass, one part is not prior and another posterior.

† Aristotle here considers that essence alone which is inseparable from an individual; but does not openly admit essence universal. See the reason of this in the Introduction.

universal

universal is common. For that is called universal which is naturally adapted to be inherent in many things. Of what, therefore, will this be the essence? For it will either be the essence of all things, or of nothing. But it is not possible that it can be the essence of all things: and if it should be the essence of one thing, other things also will be this. For things of which the essence and very nature are one, are themselves also one. Further still: essence is said to be that which is not predicated of a subject; but universal is always predicated of a certain subject. Shall we say, therefore, that it cannot subsist, indeed, in the same manner as the very nature of a thing, but that it is inherent in it, as animal in man and horse? It is evident, therefore, that there will be a certain definition of it. But it is of no consequence if there is not a definition of every thing which essence contains. For, nevertheless, this will be an essence of something, as man of man, in which he is inherent. So that the same thing will again happen. For essence will be the essence of man, as animal of that species in which it is inherent as peculiar.

Again: it is impossible and absurd, that this particular individual thing, and essence, if they are composed from certain things, should not be composed from essences, nor from a particular individual thing, but from quality. For that which is not essence, and also quality, will be prior to essence, and this particular individual; which is impossible. For it is not possible that participated properties can be prior to essence, either in definition, or time, or generation; since they would thus have a separate subsistence. Further still: in Socrates, who is essence, essence will be inherent; so that Socrates will be an essence in two essences. And, in short, if man is essence, and such things as are thus denominated, it will happen that nothing contained in definitions is the essence of any thing, and that it has not a subsistence separate from them, and does not subsist in another. I say, for instance, that there is not any animal besides those which rank as particulars, nor any thing else of the things contained in definitions. From these considerations, therefore, it is evident that nothing which has an universal subsistence is essence, and that nothing of things predicated in common signifies this particular individual, but a particular quality. For, if this be not admitted, many other things will happen, and, among the rest, that there will be a third man.

This, too, will be evident from the following consideration: It is impossible that essence can be composed from essences, which are inherent in such a manner as to be in energy. For, two things thus subsisting in energy are never
one

one in energy. But, if they are two things in capacity, they will be one. Thus, the double is composed from two halves in capacity; for energy separates them. So that, if essence is one thing, it will not be composed from inherent essences, and after that manner which Democritus* rightly asserts. For he says it is impossible that one atom should be generated from two, or two from one: for he makes indivisible magnitudes to be essences. It is evident, therefore, that the like will take place in number, if number is a composition of monads, as it is said to be by some. For, either the duad is not one, or it does not contain the monad in energy. But that which happens is attended with a doubt: for, if it is neither possible that any essence can subsist from universals, because universal does not signify this particular individual, but a thing with a particular quality, nor possible for any composite essence to consist from essences in energy, every essence will be incomposite. So that neither will there be definition of any essence. However, it appears to all men, and we have formerly asserted, that definition is either alone or principally of essence. But now it is concluded, that neither is there a definition of essence. There will not, therefore, be a definition of any one thing. Or shall we say that after a certain manner there will be, and after a certain manner there will not be, a definition of essences? But what we have now said will be more manifest hereafter.

C H A P. XIV.

FROM these very things, that which happens to those who assert that ideas are separate essences, and who at the same time make form to consist from genus and differences, is manifest. For, if forms and animal are in man and horse, there is either one and the same, or a different animal in number. For by definition it is manifest that there is one and the same; since he who says that it is in each will assign the same reason. If, therefore, there is some man, itself subsisting by itself, this particular individual, and separate, it is necessary

* "That is," says Alexander, "as Democritus denied that one atom could be produced from two, because, according to his doctrine, atoms are impassive, or two from one; for he affirmed them to be indivisible: so we (says Aristotle) affirm it to be impossible that one essence should be produced from two essences in energy, but that this can alone be effected by two subsisting in capacity."

also,

also, that those things from which it consists, as, for instance, animal and biped, should signify this particular individual, and should be separate, and essences: so that this will likewise be the case with animal. If, therefore, animal is the same in man* and in horse, as you in yourself, how will it be one in things which are separate, and why will not this animal also subsist separate from itself? In the next place, if it participates of biped and multiped, it will be impossible that any thing should happen. For contraries will be at the same time inherent in the same thing, subsisting as one, and as this definite particular. But if it does not participate, what is the mode, when any one says an animal is biped, or capable of walking? But, perhaps they form a composite, and touch, or are mingled. All these modes, however, are absurd. Shall we say that that which is different in number is in each? There will, therefore, be infinite particulars, as I may say, of which the essence is animal: for man is not from animal according to accident. Further still: animal itself will be many things. For animal, which is in every individual, is essence; since it is not predicated according to any thing else. But if this be not the case, man will subsist from that, and that will be the genus of man. And again, all things from which man consists will be ideas. Idea, therefore, will not be of one thing and essence of another: for this is impossible. Hence each of those things contained in animals will be animal itself. Besides, this will subsist from a certain particular, and how will animal subsist from it? Or how is it possible that there should be animal, which is itself essence, besides animal itself? Further still: these things will happen in sensibles, and things still more absurd than these. But if it is impossible that this can be the case, it is evident that there is not idea† of them, in such a manner as some assert there is.

C H A P. XV.

SINCE, therefore, the whole and form are of a different essence (but I say, that the former is essence as matter assumed together with form, but the latter

* The words *εἰς τὴν αὐτοῦ φύσιν* are omitted in the printed text; but both the sense and the text of Alexander require that they should be inserted.

† Again we refer the reader to the Notes on the thirteenth and fourteenth books of this work, in which he will find a solution of all the apparent objections of Aristotle to the doctrine of ideas.

is

is entirely form), hence, of such things as are denominated according to the former of these, there is corruption ; for there is also generation. But of form there is not corruption ; for neither is there generation. For the being or form of house is not generated, but of this particular house. But forms *are* and *are not*, without generation and corruption : for it has been shown that these are neither generated nor made by any one. Hence there is neither definition * nor demonstration of sensible particular essences, because they have matter, the nature of which is such, that it is possible for it both to be and not be. On this account all the individuals of sensibles are corruptible. If, therefore, demonstration is of things necessary, and also scientific definition, and it is not possible that science can be at one time science, and at another time ignorance, but a thing of this kind is opinion ; in like manner demonstration and definition cannot pertain to things which may subsist differently, but such as these are the objects of opinion. It is evident, therefore, that things which may subsist differently at different times, are not the objects of either demonstration or definition. For things corruptible are not manifest to those who possess science, when they are not present to sense. And though the same reasons are preserved in the soul, there will no longer be either definition or demonstration. Hence he who defines any thing which ranks among particulars, ought not to be ignorant that a definition of this kind may always be subverted. For it is not possible that such things can be defined.

Neither is it possible to define any idea : for idea ranks, as they say, among the number of particulars, and has a separate subsistence. It is also necessary that definition should consist from names. But he who defines does not make a name ; for it will be unknown : but the things which are admitted are common to all things. It is necessary, therefore, that these should also subsist in other things : just as, if any one should define you, he would say that you are a slender animal, or white, or something else which also belongs to another.

* In particulars, though the thing which is demonstrated remains, and though he remains who possesses the definition and demonstration of it, and also, though the definition itself which is possessed in the soul is preserved free from oblivion, yet there will neither be definition nor demonstration. For, after the departure of that object from sense of which I possess the definition, though I remain, and the thing of which I possess the definition remains, and the definition itself subsists in full perfection, yet I am ignorant whether this object exists or not. But the proper objects of science and definition are *in every respect* manifest ; and consequently there can neither be any definition nor demonstration of particulars.

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If some one, however, should say, Nothing hinders but that all these may separately belong to many persons, but that all collectively only belong to this individual, we must say, in the first place, that animal biped pertains to both, viz. to animal and to biped. And this, indeed, must necessarily take place in things perpetual, since they have a prior subsistence, and are parts of a composite. But they are also separate, if man is separate; for either nothing will be separate, or both. If, therefore, nothing, there will not be genus besides species; but if both are separate, there will also be difference. In the next place, because they are prior in essence; these, on the contrary, will not be taken away. And, besides this, ideas are from ideas; for those things from which others consist are more incomposite. Further still: it is requisite that those things from which idea consists, should be predicated of many things; as, for instance, animal and biped. For, if not, how can it be known? For there will be a certain idea which cannot be predicated of more things than one. This, however, does not seem to be the case; but every idea appears to be participable. As we have, therefore, said, they are ignorant that it is impossible for definition to take place in things eternal, and especially in such as are single, as the sun and moon. For they not only err in adding things of this kind, which being taken away the sun will still remain, such as is that of revolving round the earth, or being concealed by night; for if the sun should stop in his course, or become apparent by night, he will be no longer sun; but it will be absurd if, in this case, he should not be sun: for the sun signifies a certain essence. Besides, they assume those particulars which may also be asserted of another thing. Thus, for instance, if something else should become a thing of this kind, it is evident that it will be sun. The definition, therefore, is common. But the sun ranks among particulars, in the same manner as Cleon or Socrates. In short, why has no one of them given a definition of idea*? For the truth of what we have now said will become apparent to him who shall make the attempt.

* Idea, considered in itself as an essence perfectly simple and without parts, cannot be defined, because definition is of things complex; but considered as having a subsistence by participation in the dianoëtic part of our soul it is definable.

C H A P. XVI.

BUT it is evident that most of those things which appear to be essences, as the parts of animals, are only so in capacity*; for none of them has a separate subsistence. But, when they are separated, then they are all of them as matter, and earth, and fire, and air. For none of them is one thing, but each is as it were a heap, before they are digested, and one thing is produced from their conjunction. But some one may especially apprehend that the parts of animated natures and of the soul very nearly approach to a subsistence both in energy and capacity, because they possess the principles of motion from something in their flexures. Hence some animals live † when divided. But at the same time all of them will subsist in capacity, when they are one continued thing by nature, and not by force, or coalescence. For a thing of this kind is mutation. But, since *the one* is denominated as *being*, and the essence of *the one* is one thing, and those things of which the essence is one in number are one in number, it is evident that neither *the one* nor *being* can be the essence ‡ of things, as neither the essence of element or principle is the essence of all things. But we inquire, what, therefore, the principle is, that we may proceed to that which is more known. Of these, then, that which is being and one, is more essence than either principle is, or element, or cause. But yet neither are these essences, if nothing else which is common is essence. For essence is not inherent in any thing but itself, and that by which it is possessed, of which it is the essence.

Further still: *the one* will not be in many places at the same time; but that which is common is at the same time present with all things in many places. So that no universal can have a subsistence separate from particulars. But those who say that there are forms in one respect speak rightly, in giving them a separate subsistence, if they are essences; but in another respect not

* In the printed text *δυναμεις*; but the sense requires that we should read *δυναμις*. The text of Alexander also has *potentiā*.

† For serpents, says Alexander, when cut into two parts, still possess motion, as also the feet of locusts, and of spiders called phalangia. And this is eminently the case with the star fish and the polypus.

‡ Neither *being*, nor *the one*, considered as merely subsisting by an abstraction from sensibles, is the essence of things; but this is not the case with *being itself*, and *the one itself*. See the Notes to the thirteenth and fourteenth books.

rightly, because they say there is one form in many. But the reason of this is their inability to assign what such like essences are which are incorruptible, and which have a subsistence independent of particulars and sensibles. They, therefore, make them to be the same in species with corruptible * natures (for these we know), viz. man itself, and horse itself, adding the word *itself* to sensibles. Though, even if we did not see the stars, yet I think there would no less be eternal essences besides those of which we have a knowledge. So that also now, though we are not able to see what eternal essences are, yet perhaps† it is necessary that certain eternal essences should have a subsistence. It is, therefore, evident, that none of those things which are called universals is essence, and that no essence is composed from essences.

C H A P. XVII.

BUT, again, as if making another beginning, let us say what, and what kind of a thing we ought to call essence. For, perhaps, from these things, the particulars respecting that essence which is separate from sensible essences will also be apparent. Since, therefore, essence is a certain principle and cause, it is requisite that we should proceed from hence in our inquiry. But the investigation, on what account a thing subsists, always proceeds as follows, viz. on what account one thing is inherent in a certain other thing. For to inquire on what account a musical man is a musical man, is either to inquire, as we have said, on what account a man is a musician, or to inquire something else. To inquire, therefore, on what account a thing is that thing which it is ‡, is to inquire nothing. For it is requisite that to *be inherent* § in some-

* Ideas properly so called are not distributed into the multitude of particulars, but have a subsistence prior to the many, as will be fully shown in the Notes to the two last Books of this work. Hence they cannot be the same in species with corruptible natures; for they are perfectly incorporeal and eternal essences. Aristotle, therefore, cannot be serious in what he now says.

† Alexander well observes, that Aristotle in this place uses the word *perhaps*, because he has not yet demonstrated that there are certain essences besides sensibles, though to us invisible. That there are, however, such essences, is demonstrated by Aristotle in the twelfth book of this work.

‡ i. e. To inquire Why man is man?

§ It appears from the Commentary of Alexander that, instead of *το εν τινι* here, as in the printed text, we should read *το εν τινι*.

thing,

thing, and *to be*, should subsist as manifest. I say, for instance, that the moon is eclipsed : but of the inquiry, Why a thing is that thing which it is? there is one reason, and one cause in all things ; as, on what account a man is a man, or a musician a musician, unless some one should say that every thing is indivisible with respect to itself. But this is to be one ; and this is common to all things, and is concise. Some one, however, may inquire, On what account man is that kind of animal which he is? This, therefore, is evident, that such a one does not inquire on what account he who is a man, is a man? He, therefore, inquires, Why a certain thing subsists in a certain thing? But that it is inherent ought to be manifest : for if not, he investigates nothing. Thus, for instance, on what account does it thunder? Because a sound is produced in the clouds : for thus one thing is inquired respecting another. And, on what account are these things, as, for instance, tiles, and stones, a house? It is evident, therefore, that he investigates the cause. But this is, as I may say, speaking logically, the very nature of a thing ; which in some things is *that for the sake of which*, as, perhaps, in a house, or a bed. But in other things it is that which first moves : for this also is a cause. A cause, however, of this kind is investigated, when a thing is generated or corrupted ; but the other cause * is investigated when a thing already is. But that which is investigated, is especially latent in things not conveniently predicated ; as, for instance, in the inquiry, What man is? because it is simply asserted, and not definitely, that he is this or that. It is, however, requisite to investigate definitely, otherwise it will come to pass that something and nothing will be investigated in common. But, since it is requisite that essence should be possessed and should subsist, it is evident that the inquiry will be on what account the matter is. As, for instance, these particulars are a house : But on what account? Because these are that which a house is. Thus, too, in the inquiry, Why man is this particular thing, or why this body possesses this particular thing? the like inquiry is made. So that the cause of the matter is investigated : but this is the form by which any thing is ; and this is essence. It is evident, therefore, that there is not any investigation nor discipline respecting things which have a simple subsistence, but that there is another mode of investigating things of this kind.

But, because that which is composed from something is so composed as that

* That is the formal cause.

the

the whole is one thing, and not as a heap, but as a syllable; but a syllable is not the elements of speech, nor is it the same as *b* and *a*, nor is flesh, fire, and earth; for when a dissolution takes place, flesh and syllable no longer remain, but the elements, fire and earth, continue to subsist;—this being the case, syllable is something besides the elements, viz. besides vowel and mute: and flesh is not only fire and earth, or the hot and the cold, but also something else. If, therefore, it is necessary, that flesh should either be an element, or that which is composed from elements; if it is an element, the same reasoning will again take place. For from this fire and earth will consist, or flesh, and still further, something else; so that a progression will take place to infinity. But, if it is composed from element, it is evident that it will not consist from one but from many, or it will be that very element itself. So that, again, the same reasoning must take place in this as in flesh or syllable. But it should seem that there is a thing of this kind, and that it is not an element, but the cause that this thing is flesh and that a syllable: and in a similar manner with respect to other things. But this is the essence of every thing: for this is the first cause of subsistence. However, since some things are not the essences of things, but this is the case with those alone which are naturally essences and which are constituted by nature, it may appear to some that this nature also, which is not an element but a principle, is essence. But an element is that into which, being inherent as matter, a thing is divided, as, of the syllable *ab*, *a* and *b*.

* *i. e.* Form.

ARISTOTLE'S

ARISTOTLE'S METAPHYSICS.

B O O K VIII.

C H A P. I.

FROM what has been said, it is requisite to syllogise, and, by a summary collection, form a conclusion. But we have said that the causes, principles, and elements of essences are investigated. And, with respect to essences, some are granted to have a subsistence by all men; but concerning others, some have entertained peculiar opinions. Natural essences, indeed, have been granted to subsist; such as fire, earth, water, and other simple bodies; in the next place, plants, and the parts of these; animals also, and the parts of animals; and, lastly, heaven, and the parts of heaven. But those who have entertained peculiar opinions respecting essences, say that forms and the mathematical species are essences. However, it happens, from the reasonings about things, that the very nature of a thing, and that which ranks as a subject, are essences. Again: in another respect, genus is more essence than species, and universal than particulars. Ideas also are conjoined with universal and genus; for, according to the same reasoning, they appear to be essences. But since the very nature of a thing is essence, and the reason of this is definition, hence we have unfolded the particulars respecting definition, and the essential. And, since definition is a sentence, and a sentence has parts, it was also necessary to perceive respecting a part, what are the parts of essence, and what are

are not; and, likewise, whether it is necessary that these should be the same with the parts of definition.

Further still: neither is universal nor genus, essence. But we shall afterwards speak concerning ideas, and mathematical entities: for some say that these have a subsistence besides sensible essences. At present, however, we shall discourse respecting those essences which are acknowledged to have a subsistence. But these are sensible: and all sensible essences have matter. But essence is that which ranks as a subject; and this is in one respect matter, but in another definition. And I call matter that which is not this definite particular in energy, but in capacity. But definition and form are subjects in a different respect, which are definite particulars, and are separable by reason. But the third is that which consists from these, of which alone there is generation and corruption, and which is simply separable. For of those essences which subsist according to reason*, some are separated, and others not. But that matter is essence is manifest: for in all opposite mutations, there is something which is as a subject to those mutations; as, for instance, according to place, that which is now here, is again elsewhere. Thus, too, according to increase, he who is now so much, is again less or more; and according to internal change, he who is now well, is again ill. In like manner also, according to essence, that which is now in generation, is again in corruption: and that which is now a subject as this definite particular, is again a subject as according to privation. And other mutations follow this; but this does not follow one or two of the rest. For it is not necessary, that if any thing has local matter, it should also have this matter generable and corruptible. What the difference, however, is between the being simply and not simply generated, we have declared in our Physics.

C H A P. II.

BUT, since the existence of that essence which is as a subject, and as matter, is acknowledged by all men, but this is that which subsists in capacity, it now remains that we should declare what that essence is amongst sensibles† which subsists as energy. Democritus, therefore, appears to have thought that there

* By essences which subsist according to reason, Aristotle means forms.

† By an essence among sensibles subsisting in energy, Aristotle means form.

are

are three differences. For he considered the subject body and matter to be one and the same; but that it differed either by *rysm*, which is figure; or by *trope* which is position; or *diathege* which is order. But there appear to be many differences. Thus, some things are said to be from the composition of matter, and these are such things as are mingled, as for instance mead; but others from a nail, as a little coffer; others again from a bond, as a bundle; others from glue, as a book; and others again from many of these things. Some too, are said to be from position, as a threshold, and the lintel of a door. For these in a certain respect differ from position. Others again derive their being from time, as supper and dinner: others from place as winds; others from the passions of sensibles, as from hardness and softness, density and rarity, dryness and moisture: and some things are from some of, but others, from all these. And, in short, some things are from transcendency, others from deficiency. So that *is* is predicated in so many ways. For a threshold *is*, because it is so situated; and its essence signifies that it has this position: and *to be* ice, is to be thus condensed. But the being of some things is defined by all these, and this because some things are mingled, and others consist from temperament; some are bound, and others are condensed; and others use other differences, as the hand, or the foot. The genera of differences therefore are to be taken into consideration: for these will be the principles of being; as, for instance, things which have their subsistence in the more and the less, or the dense and the rare, and other things of this kind. For all these belong to transcendency and deficiency. But, if any thing has its subsistence in figure or smoothness and roughness, every thing of this kind is such through the right-lined and the curved. The essence likewise of some things consists in being mingled, and their non-existence in the opposite. But it is manifest from these things that if essence is the cause of being to every thing, in these we must investigate what the cause of the being of each of these is.

Essence, therefore, is none of these, nor is it these combined; but at the same time it subsists analogously in each. And, as in essences that which is predicated of matter is energy itself, this is especially the case in other definitions; as, for instance, if it were requisite to define a threshold, we should say that it is wood or stone thus placed; and if a house, that it is tiles and wood placed in this particular manner. Or shall we say that in some things there is that for the sake of which they are fashioned? But, if we should

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define

define ice, we should say that it is water congealed or condensed in this manner: and if symphony, that it is such a mixture of the sharp and the flat. And after the same manner also in other things. It is evident therefore, from these things, that energy and form are different from matter. For of some things composition* is the energy and form, of others mixture†, and of others something else of the above mentioned particulars. Hence, of such as define, those who say that a house is stones, tiles, and wood, define a house in capacity. For these are matter. But those who say that a vessel is that which which preserves possessions and bodies, or add something else of this kind, define energy. And those who add both these define a third essence, and an essence consisting from capacity and energy. For the definition which subsists through differences appears to be that of form and energy; but that which is from things inherent appears to be rather the definition of matter. The like also takes place with respect to those definitions which Archytas admitted: for they are composed from both. Thus, for instance, What is serenity? Quietness (according to him) in an abundance of air. For air is matter, but quietness, energy and essence. What is tranquillity? Smoothness of the sea. The subject indeed, as matter, is the sea; but energy and form, smoothness. It is evident, therefore, from what has been said, what a sensible essence is, and how it subsists. For one thing is as matter, another as form, because it is energy; but the third is that which is composed from these.

C H A P. III.

BUT it is necessary not to be ignorant that it is sometimes concealed from us whether a name signifies a composite essence, or energy and form; as for instance whether a house is the sign of that which is common, viz. of a covering from tiles and wood and stones thus placed; or whether it is a sign of energy and form, because it is a covering. Likewise, with respect to a line, whether it is a duad in length‡ or the duad§. And, with respect to animal, whether it is soul in body, or soul. For soul is an essence, and the energy of

* As in water and honey.

† As of grains of wheat and barley.

‡ For a duad in length is a composite; the duad being form, and length matter.

§ Aristotle, says Alexander, calls a line the duad, because the duad in numbers is the first interval or extension, as in lengths a line.

a certain

a certain body; but animal will be in both, not as predicated in one definition, but as with relation to one thing. These things however contribute to something else, but do not at all contribute to the investigation of a sensible essence. For the very nature of a thing belongs to form and to energy. For soul, and the being of soul are the same. But the being of man and man are not the same, unless the soul is called man. So that man, and the essence of man, will be the same in one respect, and not the same in another.

From investigation, therefore, it does not appear that a syllable * consists from letters and composition, nor that a house is tiles and composition: and this rightly: for neither the composition nor mixture of any thing is with those things of which it is the composition or mixture †. And in a similar manner, neither is this the case with any thing else. Thus, for instance, if a threshold is from position, position is not from a threshold, but rather this is from that. Nor is man animal and biped; but it is necessary that there should be something which is besides these, if these are matter, and which is neither an element, nor from an element, but which they call essence, separating it from matter. ‡ If therefore this is the cause of being, and essence, they will say that this is essence itself.

But it is necessary that this should be either eternal, or corruptible without being generated §, and generated without generation. We have however elsewhere shown and rendered manifest that form is not made by any one, nor generated, but that it becomes this particular form and that which consists from these ||. But whether there are separate essences of things corruptible, is not yet manifest; except that it is evident that there cannot be of

* Viz. the form itself of a syllable.

† This obscure sentence, which is still more obscure in the original, is thus well explained by Alexander. "If there is a composition, for example of water and honey, the mixture does not unite with either of these, viz. with water or honey, or with both; for the purpose of forming mead. For if mixture was a thing able to subsist by itself, it would not be improper to say that it produced mead by a conjunction with water or wine, or with both these; but since it is not so, this cannot be said; but mead is the mixture itself."

‡ The sense requires that, instead of *εἰ οὖν τούτ' αἰτίον του εἶναι, καὶ οὐσίας τούτο, αὐτὴν αὖ τὴν οὐσίαν οὐ λέγοιεν*, we should read, *εἰ οὖν τούτ' αἰτίον του εἶναι καὶ οὐσίας, αὐτὴν αὖ τὴν οὐσίαν λέγοιεν*. And this emendation is justified by the text of Alexander, which I have accordingly adopted in my version of this passage.

§ For in the former book it has been demonstrated that form is not generated, but that which consists from matter and form

|| i. e. from matter and form.

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some

some corruptible natures, which are not able to subsist independently of sensibles, as a house, or a vessel. Perhaps, therefore, neither are these essences, nor is any thing else essence which has not a natural subsistence: for some one may consider nature, as alone that essence which subsists in things corruptible. So that the doubt entertained by the followers of Antisthenes, and those similarly unlearned, viz. that essence cannot be defined, may now be opportunely solved; for, say they, definition is a long sentence; but it is possible to instruct others in the particular quality of a thing, though it cannot be defined: for you cannot say what silver is, but you may say that it resembles tin; so that of a certain essence, as, for instance, of that which is a composite, whether it be sensible or intelligible, there may be a definition and reason; but there cannot be of those things from which these first consist, if definitive reason signifies something of something; and it is requisite that this should be as matter, but that as form. It is also evident why, if in a certain respect numbers are essences, they are so after this manner, and not because they are a multitude* of monads; for definition is a certain number: (for it is divisible and may be resolved into indivisibles, since reasons are not infinite) and number is a thing of this kind. And as, when any one of those things from which number consists is subtracted from, or added to a number, there is no longer the same, but a different number, though that which is the least should be subtracted or added; in like manner, neither will definition nor the very nature of a thing, be any longer the same, if any thing be taken away or added. Besides, it is requisite that there should be something through which number itself is one, and which now they cannot assign, if number is one thing; for either it is not one thing, but is as it were a heap, or, if it is, it must be said what that is which makes it to be one from many things. Definition also is one thing composed from the many; but neither can they assign a reason why this is one; and this very properly happens on the same account. Essence also is after this manner one, and not according to some, who assert that it is as it were a certain monad, or point, but each is energy and a certain nature; and as number has neither more nor less, so neither has that essence which subsists according to form; but if there is any essence which has the more and the less, it is that which subsists according † to matter.

* Πλῆθος is omitted in the printed text.

† Instead of *μετὰ ἰσχύος* with matter, as in the printed text, the sense requires we should read, as in my translation, *κατ' ἰσχύος*. The version of Beffarion also has *secundum materiam*.

Concerning

Concerning the generation therefore and corruption of the above mentioned essences, how each may be admitted to take place, and in what respect each is impossible, and also concerning the reduction of definition to number, let it be thus far determined.

C H A P. IV.

CONCERNING a material essence we ought not to be ignorant, that, though all things are from the same first nature *, or from the same things as those which are first, and though the same matter is as a principle to generated natures, yet at the same time there is something which is proper or domestic to every thing. Thus, for instance, the first matter of phlegm is the sweet or the fat; but of bile the bitter or something else: and these things also, are perhaps from the same thing; but many matters of the same thing are generated when one thing is the matter of another: thus phlegm is from the fat and the sweet, if the fat is from the sweet; and it is also from bile, because it is analysed into bile, as into the first matter: for one thing is from another in a twofold respect, viz. either by progression, or analysis into its principle; but, one matter existing, it happens that different things are generated, through the moving cause. Thus, from wood a chest and bed are formed. Of some things, however, which are different, the matter is necessarily different. Thus a saw can never be made from wood, nor is it in the power of the moving cause to effect this; for it can never make a saw from wool or from wood. But, if it is possible for the same thing to be made from different matter, it is evident that art, and the principle as moving are the same: for if matter and that which moves are different, that also which is generated will be different. When therefore any one investigates the cause of a thing (since causes are predicated multifariously) it is requisite to enumerate all the contingent causes. Thus, for instance, what is the cause of man as matter? is it not the menstrual blood? But what is the cause as that which moves? is it not seed? What is the cause as form? that which is the very nature of a thing. What is the cause as that for the sake of which he subsists? the end; but perhaps both these are the same. It is requisite however to enumerate the most proximate causes: What is the matter of man? not fire or earth, but that which is proper or domestic †.

* By the same first nature Aristotle means *formless matter*.

† Viz. The menstrual blood.

With

With respect to physical and generated essences, therefore, it is necessary that he should proceed in this manner, who proceeds rightly, if there are these causes, and they are so many in number, and a knowledge of causes is necessary. In * *physical essences however, but which are perpetual*, a different mode of proceeding must be adopted; for some of them perhaps are without matter, or have not a matter of this kind, but such only as is moveable according to place. Nor does matter belong to such things as have indeed a natural subsistence but are not essences, but that which is the subject to these is essence. Thus, for instance, what is the cause of an eclipse? what the matter of it? No matter † however can be assigned, but the moon is that which suffers; but what is the cause as that which moves, and corrupts the light? the earth. An eclipse however, has not perhaps that cause for the sake of which it subsists; but the cause which is as form is definition. This however is immanifest, unless it subsists together with cause: as, for instance, what is an eclipse? a privation of light; but if it is added that this privation of light is occasioned by the intervention of the earth, this will be a definition together with the cause. Moreover with respect to sleep it is immanifest what that is which is first passive: shall we say that it is the animal? be it so. But according to what is this passive? and what is first passive? the heart, or something else? and in the next place, to what is it passive? likewise what is its passion, and which is not the passion of the whole? shall we say it is such a particular kind of immobility? be it so. But this is because there is something which is first passive.

C H A P. V.

BUT, since some things both are and are not without generation and corruption, as points, if they have a subsistence, and, in short, forms (for whiteness is not generated, but the white wood, if every thing which is generated is generated from something, and is generated something); this being the case, all contraries are not generated from each other, but a white man is in one

* Viz. In the celestial spheres, the essence of which is perpetual, as is shown by Aristotle in the 12th book of this work.

† It is well observed here by Alexander that, if the moon was the *matter* of an eclipse, but *form* the eclipse itself, when the eclipse ceased, the moon would be no more: for, forms being taken away, the things also are taken away which subsist through them,

way

way generated from a black man, and in another way whiteness from blackness. Nor of every thing is there matter; but of those things of which there is generation and mutation into each other. But such things as either are or are not without mutation, these are without matter. It is, however, dubious, how the matter of every thing subsists with respect to contraries. Thus, for instance, if the body is well in capacity, but disease is contrary to health, shall we say that both are in capacity? Shall we also say that water is both vinegar and wine in capacity? Or shall we say that the body is the matter of health, according to habit and according to form, but that it is the matter of disease according to privation, and unnatural corruption? But there is a certain doubt why wine is not the matter of vinegar, nor vinegar in capacity, although vinegar is produced from it. Also, with respect to that which has life, it may be doubted, whether it is a dead body in capacity or not. The doubt, however, may be solved, by saying that corruptions subsist from accident. But the matter itself of an animal is, according to corruption, the capacity and matter of dead body, and water also of vinegar. For they are generated from these, in the same manner as night from day. And it is requisite that such things as thus change into each other, should return into matter. Thus, in order to the generation of an animal from a dead body, it is requisite that the dead body should first be resolved into matter*, and, that thus an animal should afterwards be generated from it. In like manner, vinegar must be resolved into water, and thus from it wine will afterwards be produced.

C H A P. VI.

WITH respect to the abovementioned doubt concerning definitions and numbers, what is the cause of their being one? For, of all such things as have many parts, and where the whole is not as it were a heap, but is something besides the parts, there is a certain cause. For in some bodies contact is the cause of their being one, in others viscosity, or some other passion of this kind. But definition is one discourse, not by a bond, as the Iliad, but because it is of one thing. What then is it which makes man to be one, and why is he one, and not many things, such as, for instance, animal and biped, especially if, as some say, animal itself and biped itself have a subsistence? For

* *i. e.* Into the four elements.

why

why is not man those very things? And will men subsist, not by the participation of one man, but by the participation of two things, animal and biped? In short, man will not be one thing but many things, animal and biped. It is manifest, therefore, that those who are thus accustomed to define and speak, cannot assign the reason of this, and solve the doubt. But if it is as we have said, that one thing is matter and another form; and again, one thing is in capacity and another in energy, the doubt which is investigated will no longer appear to exist. For the doubt is the same as if the definition of a garment were round brass. For this name would be a sign of the definition. So that the object of investigation is, what the cause is that the round and the brass are one. The doubt, therefore, appears no longer to remain, because this is matter, and that form. What else then causes that which was in capacity, in things in which there is generation, to subsist in energy, except the efficient cause? For there is no other cause of the sphere in capacity becoming a sphere in energy; since this * is the very nature to both. But with respect to matter, one kind is intelligible and another sensible: and always with respect to definition, one thing is matter and another energy, as, a circle is a plane figure †. But such things as have neither intelligible nor sensible matter, of these each is immediately one particular thing, as that which is this particular being (*i. e.* substance), also quantity and quality. Hence, in definitions there is neither *being* nor *the one*, and the very nature of a thing is immediately one particular thing, as also a particular being. Hence, too, there is no other cause that each of these is one, nor that each of these is a particular being. For immediately each is a certain being, and a certain one; yet neither *being* nor *the one* is the genus of these, nor have they a subsistence separate from particulars. But in consequence of this doubt, some say that participation is the cause ‡; but they are dubious what the cause of participation is, and how it is effected. Some assign the copula of the soul as the cause, as Lycophron, who says that science is the copula of scientific knowledge and the soul; but others assert that life consists in the composition or conjunction of the soul with the body; though the same reason may be assigned in all things. For to be well, will either be a copula, or conjunction, or composition of the soul and health.

* By *this*, Aristotle appears to me to signify *energy*; for this is the very nature or essence of every thing, and consequently of both man and sphere.

† For here *figure* is the *matter*, and *plane* the energy or form of the definition.

‡ *Viz.* Is the cause of the unity of animal and biped.

And

And for brass to be a triangle, will be a composition of brass and triangle: and for a thing to be white, will be a composition of superficies and whiteness. But they speak in this manner, because they investigate the uniting reason and difference of capacity and energy. However, as we have before said, the last matter * and form are the same, the one being in capacity, and the other in energy. So that to investigate the cause of unity, is similar to an investigation of the cause of a thing being one. For every thing is one particular thing; and that which is in capacity, as also that which is in energy, is in a certain respect one thing. So that there is no other cause except that which subsists as moving from capacity into energy. But of such things as are without matter, each is simply and properly one and being †.

* That is to say, the proximate matter of a thing is that in capacity, which the form of it is in energy.

† Instead of *απλῶς ὅπερ ὅτι τι*, as in the printed text, the sense requires that we should read *απλῶς ἢ τι καὶ οὐ τι*.

ARISTOTLE'S METAPHYSICS.

B O O K IX.

C H A P. I.

WE have, therefore, discoursed concerning essence which is primarily being, and to which all the other predicaments of being are referred. For other things, viz. quantity, quality, and the rest which are thus denominated, are denominated according to the definition of essence: for all these have the definition of essence, as we have before observed. But, since being is denominated either substance, or quantity, or quality, and is either in capacity or energy, it is requisite that we should now speak concerning capacity and energy. And in the first place respecting that capacity* which is most properly so denominated, it does not contribute to our present design. For capacity and energy are more extended than those things which are alone predicated according to motion†. But, when we speak concerning this in our explanations of energy, we shall also render manifest the particulars respecting the rest. That capacity or power, therefore, and to be able, are predicated multifariously, we have elsewhere shown. But, of these, such as are equivocally called powers are omitted. For some are denominated by a certain simi-

* By that capacity which is most properly so denominated, Aristotle means the first and formless matter, as Alexander well observes.

† i. e. According to energy.

litude,

litude, as, in geometry *, we speak of powers, or things possible, also of things impossible, because in a certain respect they are, or are not. But such things as are referred to the same form, are all of them certain principles, and are predicated with relation to one first†, which is the principle of mutation in another, so far as it is another. For there is a capacity of suffering, which in the patient itself is the principle of passive mutation from another, so far as it is another. But there is a habit of impassivity and corruption into that which is worse, which proceeds from another transmuting principle, so far as it is another. For, in all these definitions, there is the definition of the first capacity.

Again: these are alone called either the capacities of acting or suffering, or of acting or suffering in a becoming manner. So that, in the definitions of these, the definitions of the former capacities are in a certain respect inherent. It is evident, therefore, that in a certain respect there is one power of acting and suffering (for a thing is able, both because it has a capacity of suffering, and because something else may suffer from it), and that in another respect there is a different power: for there is one power in the patient. For, because it has a certain principle, and matter is a certain principle, the patient suffers, and one thing suffers from another. Thus, that which is fat is combustible, and that which yields after this manner may be pressed; and in a similar manner with respect to other things. But there is another power in the agent; as, for instance, the hot and the power of building: the former in that which is able to give heat, and the latter in the builder. Hence, nothing which naturally possesses unity and continuity is itself passive to itself; for it is one thing, and not another: but impotency, which is contrary to such a power, is privation. So that all power and impotency are of the same thing, and subsist according to the same. But privation is predicated multifariously: for we say that a thing has privation which does not possess a certain thing, and which is naturally adapted to possess, if it does not possess, either altogether, or when it is naturally adapted; and after this manner we say that it either entirely, or in a certain respect, has privation. We also say of some

* In geometry, if one line is double, or triple, &c. of another, the power or square of it is said to be four times, or nine times, &c. the power or square of that other line. Thus the square of 4, viz. 16, is four times the square of 2, viz. 4; and the square of 9, viz. 81, is nine times the square of 3, viz. 9.

† Viz. Are predicated with relation to formless matter.

things which through violence do not possess that which they are naturally adapted to possess, that they suffer a privation of such things.

CHAP. II.

BUT since such-like principles of capacities subsist in inanimate natures, and some of them in animated natures, in soul, and in that part of the soul which possesses reason, it is evident, that of capacities or powers also, some will be irrational, but others accompanied with reason. Hence all arts, both such as are effective, and such as are sciences *, are powers; for they are the principles of mutation in another thing, so far as it is another. And all those powers which are accompanied with reason are effective of contraries; but each of those which are irrational, is alone effective of one thing. Thus, for instance, the hot is alone effective of heat; but the medicinal art is effective both of disease and health. But the cause of this is, that science is reason: and the same reason manifests both a thing and its privation, though not after the same manner. In a certain respect, indeed, reason knows both, but also in a certain respect it has a greater knowledge of the thing, than of its privation. So that it is necessary that such sciences should possess a knowledge of contraries, but of the one † essentially, and of the other not essentially. For reason knows the one essentially, but the other after a manner accidentally; since by negation and ablation it manifests the contrary. For first privation is that which is contrary; but this is an ablation of the other. But since contraries are not ingenerated in the same thing (and science is a power from the possession of reason, and the soul also has the principle of motion), hence that which is salubrious alone produces health, and that which is calidative heat, and that which is frigefactive cold; but he who possesses scientific knowledge produces both. For reason has a knowledge of both, though not similarly; and this reason subsists in soul which possesses the principle of motion. So that soul will move both from the same principle, conjoining them with the same thing. Hence natures which are endued with power according to reason, effect things contrary to the productions of those endued

* Alexander here well observes that Aristotle, by a more common appellation, calls sciences arts, because they are motive principles in another thing.

† Viz. Of habits essentially, but of privation not essentially.

with power without reason. For one principle is comprehended in reason. But it is evident that the power of alone acting or suffering follows that power which is the principle of acting or suffering well; but the latter does not always follow the former. For it is necessary that he who acts well should act; but it is not necessary that he who alone acts should also act well.

C H A P. III.

THERE are, however, some, as the Megaric* philosophers, who say that a thing when it energises is then alone endued with power, but that when it does not energise, it does not possess power; as, for instance, that he who does not build has not the power of building; but that he who builds possesses this power when he builds; and in a similar manner with respect to other things. But it is not difficult to perceive the absurdities which attend this opinion. For it is evident† that he who does not build will not be a builder. For the very essence of a builder consists in the power or capacity of building; and in a similar manner also in other arts. If, therefore, it is impossible that any one can possess arts of this kind, unless he has once learned and received them; and again, that he should be without the possession of them‡, unless he some time or other loses them, viz. either through oblivion, or a certain disease, or time (for he will not lose the thing itself, because it is perpetual), this being the case, when such a one ceases to operate, he will not be in possession of art. But how will he again immediately build on resuming the art which he had lost? The like also happens with respect to things inanimate. For neither will there be any thing hot or cold, or sweet, or, in short, any thing sensible, when they are not perceived by us. So that it happens to them, that they assert the same thing as Protagoras. But, indeed, neither will a man have any sense, if he neither perceives nor energises. If, therefore, that animal is blind which does not see, though naturally adapted to see, and when it is naturally adapted, and further as it is naturally adapted, the same animals will often in the same day be blind§, and in like manner deaf.

* By the Megaric philosophers, says Alexander, Aristotle means Zeno and his followers, who considered energy and capacity as one and the same thing.

† Viz. It is evident from the assertions of these Megaric philosophers.

‡ When he has acquired them.

§ For this will be the case with him who winks.

Again :

Again: if that is impossible which is deprived of power, it will be impossible for that which is not generated to be generated: but he who says that a thing which cannot be generated, either is, or will be, will speak falsely. For this will signify that which is impossible. So that those assertions subvert both motion and generation. For that which stands will always stand, and that which sits will always sit. For a man will not rise if he sits; since it will be impossible for that to rise which is not able to rise. If, therefore, these assertions cannot be admitted, it is evident that capacity and energy are different from each other. But those assertions make capacity and energy to be the same. Hence it is not a small thing which they endeavour to subvert. So that it happens, that it may be possible for a thing to be, and yet it may not be; and that it is possible for a thing not to be, which yet may be. In a similar manner too, in the other predicaments, that which is able to walk may not walk, and that which does not walk may be able to walk. But that is possible, to which, when the energy is present of which it is said to have the capacity, nothing will be impossible. My meaning is this, if, for instance, it is possible for any one to sit, and it happens that such an one sits, nothing impossible will take place when he sits: and in a similar manner, if it is possible for any thing to be moved or to move, to stand, or to be stopped, to be, or to be generated, not to be, or not to be generated. But the name energy, which accords with *entelecheia**; and also with other things, is principally derived from motions. For motion especially appears to be energy. Hence, to things which are not, motion is not attributed, but other predications. Thus, for instance, things which are not, are dianoëtic and desirable objects, but are not moved. But this is, because not being in energy, they may be in energy.

* "Because energy (says Alexander) is denominated in a twofold respect, according to one of these modes, ends themselves are called energies. For the end of *whitening* which is *the white*, in which whitening ceases and stops, is called energy; and in like manner the ends of other motions are denominated energies, which ends themselves are properly called *entelecheia*. But according to another mode, *motion itself* is called energy. Thus, in the instance already adduced, whitening is both in capacity and energy. It is in capacity, indeed, because it has not yet arrived at *entelecheia* and the end; but in energy, because it possesses something of energy, *entelecheia*, and the end: since in whitening, or certainly in the thing which becomes white, something of the white, and of *entelecheia* are inherent. Since, therefore, energy is twofold, the energy, says Aristotle, which accords with *entelecheia* and the end, is derived from motions. For because motion is properly called energy (for energy is considered in motion), but motion is the motion of a certain end, hence end is also called energy, because, as I have said, the energy which is considered in motion, is effected on account of the end."

For,

For, of things which are not, some are in capacity, but yet are not, because they are not in *entelecheia*.

CHAP. IV.

IF, therefore, the possible is that which we have said it is, to which energy is consequent, it is evident that it cannot be true to say that this thing is possible, and yet will not be. For if this were admitted, things which are possible * would elude our search. I say, for instance, as if some one should assert that it is possible for the diameter of a square to be commensurate with the side, but that it never will be commensurate, not considering that this is impossible, and, therefore, conceiving that nothing hinders but that a thing which is possible to be, or to be generated, neither is, nor will be. However, from what has been laid down, this is necessary. For, if we suppose that a thing may be, or may be generated, which is not indeed, but which is possible, there will be nothing impossible in such a supposition. But † if it is admitted that the diameter is commensurable with the side, it will follow that even are equal to odd numbers, which is impossible. For the false is not the same with the impossible. For, that you now stand is false indeed, but not impossible. At the same time also, it is manifest, that if, in consequence of the existence of *a*, it is necessary that *b* should exist, if it is possible for *a* to be, it necessarily follows that it is also possible for *b* to be. For if it is not necessarily possible for it to be, nothing hinders but that it may not be possible for it to be. Let it, therefore, be possible for *a* to be: since, then, it is possible for *a* to be, nothing impossible will happen from considering *a* as existing. It is also necessary that *b* should exist; but it was impossible. Let it, therefore, be impossible. But if it is impossible that *b* should exist, it is necessary that it should also be impossible for *a* to exist. But the first is, and therefore the second is. Hence, if *a* is possible, *b* also will be possible, if they subsist in such a manner, as that in consequence of the existence of *a* it is necessary that *b* should exist. If, therefore, *a* and *b* thus subsisting, it is not possible for this to take place with respect to *b*, neither will *a*, *b*, subsist in

* Instead of *τα αδυνατα*, as in the printed text, I read *τα δυνατα*.

† The text in this place appears to be very corrupt, which I have endeavoured in my translation to restore from the comment of Alexander.

the

the manner in which they are supposed to subsist. And if *a* being possible, it is also necessary that *b* should be possible; if *a* is, it is necessary that *b* also should exist. For, that it is possible from necessity for *b* to exist, if it is possible for *a* to exist, signifies this, that if *a* is, and when it is, and as it is possible to be, then this is also necessary with respect to *b*.

C H A P. V.

BUT since of all powers some are connate as those of the senses, but others are from custom, as the power of playing on the pipe, and others again are from discipline, as those of the arts, it is necessary that those powers which are derived from custom and reason should be acquired through antecedent energies. But it is not necessary that those which are not of this kind, and which are passive powers, should subsist after this manner. Since, however, that which possesses power is able to effect something, it is necessary to add in the definition at a certain time, and after a certain manner, and such other particulars as are consequent to these. And some things, indeed, are able to move according to reason, and their powers are accompanied with reason; but others are irrational, and their powers also are irrational. And it is also necessary that those should subsist in that which is animated, but these in both. This being the case, it is necessary with respect to such like powers, that when the active and passive approximate as far as they are able, the one should act and the other suffer. But in the rational powers this is not necessary: for with respect to all these, each is effective of one thing*; but those are effective of contraries†. It is, however, impossible that the rational powers should at the same time produce contraries. It is necessary, therefore, that something else should be that which has dominion. But I call this appetite, or free-will: for whatever it desires, this it will principally effect when it approximates as far as it is able to that which is passive. So that every thing which is endued with power according to reason, must necessarily accomplish this, when it desires that of which it possesses the power, and as it possesses. But it has the power of acting, that which is passive being present, and subsisting in this manner; for if not, it will not be able to act. For there is no longer occasion to add the words, nothing external impeding; since, as it is a

* As fire of heat.

† As medicine of health and disease.

power

power of acting, it possesses power. It does not, however, possess this power universally, but when it subsists in such a manner that external impediments are removed. For thus certain things in the definition are taken away. Hence, the efficient will neither at the same time effect two things or contraries, though he should at the same time wish or desire to effect them. For he will not thus possess the power of them at the same time; nor is power capable of effecting contraries at once. For he will thus effect things of which he has the power.

C H A P. VI.

SINCE then we have spoken concerning the power which is denominated according to motion, let us now consider what energy is, and what the quality which it possesses. For by division the nature of that which is endued with power will at the same time be manifest; because we not only say that a thing is endued with power which is naturally adapted to move another, or to be moved by another, either simply or after a certain manner, but we also say this in another respect. Hence in our inquiry we shall also discuss these particulars. But for a thing to subsist in energy, is not such a subsistence as when we say a thing subsists in capacity. But we say a thing is in capacity, as Mercury in the wood, and the half in the whole, because it can be taken away from the whole; and we call him scientifically knowing in capacity, although he does not contemplate, who is able to contemplate. However, by an induction of particulars, what we wish to say will be manifest. For it is not necessary to investigate the definition of every thing, but it is sufficient to perceive the analogous, viz. that as building is to the architect, he who is awake to him who is asleep, he who sees to him whose eyes are closed, but who possesses sight, and as that which is separated from matter is to matter, and that which is effected by art to that which is uneffected, so is energy to that which is endued with power or capacity. But all things are not similarly said to be in energy, but analogously, as this thing in this, or with relation to this; but that in that, or with relation to that. For some things are as motion with respect to power, but others as essence with respect to a certain matter. But the infinite and the void, and such-like things, are after one manner said to be in energy and capacity, and after another manner many other things; as, for instance, that which sees, that which walks, and that

E e

which

which is seen. For it sometimes happens that these are simply verified. Thus, one thing is said to be seen, because it is seen; but another, because it has the power of being seen. But the infinite does not so subsist in capacity, as that it will at length become separate in energy, but in knowledge*. However, that this energy subsists in capacity is owing to a division which never fails†; but this never-failing division will not cause it to become separate in energy‡. With respect, therefore, to a subsistence in energy, what it is, and what the quality which it possesses, let it be manifest to us from these and such-like particulars.

C H A P. VII.

It is now requisite to determine when a thing is in capacity, and when it is not. For a thing is not in capacity at any time. Thus, for instance, is earth man in capacity or not? Or is not this rather the case when seed is generated? Nor even then, perhaps. As neither is every thing healed by the medicinal art, nor by fortune; but there is something which is capable of being healed, and this is sane in capacity. But the definition of that which from a subsistence in capacity acquires through the dianoëtic part a subsistence in energy, is this: that which is reduced into energy, when he by whom it is so reduced is willing, nothing external impeding. But this takes place in him who is healed, when nothing within him impedes. In like manner, a house also is in capacity, if nothing in this, and in the matter of it, prevents the house from being constructed, and when there is nothing which ought to be added, or taken away, or changed: for this is a house in capacity. And in a similar manner with respect to other things, the principle of the generation of which is external, and with respect to those which contain this principle within themselves, and which, when nothing external impedes, energise from themselves. Thus, seed § is not yet in capacity: for it is requisite that it should subsist in another, and be changed.

* For we know both that number can be increased, and magnitude divided, to infinity; but this can never be effected in energy.

† For magnitudes are divisible to infinity.

‡ Several lines follow this word in the printed text which are not to be found in the Commentary of Alexander, and are not translated either by Bessarion or Argyropylus, the most ancient translators of Aristotle. I have, therefore, omitted them in my version, as undoubtedly spurious.

§ Viz. Seed when it is contained in a vessel is not wheat in capacity; but this is only true when it is placed in the earth, that it may be changed, i. e. that it may germinate, through its own innate principle.

But

But when it is now a thing of this kind through its own principle, then this is in capacity; but that * requires another principle. Just as earth is not yet a statue in capacity; for when changed it will be brass. But it appears that this is not what we now say, but the following, viz. that a chest is not wood, but wooden, nor wood earth, but earthly. Again, if earth is after this manner not any thing else, but is considered denominatively, that which is always simply in capacity, is that which is posterior. Thus, for instance, the chest is neither earthly, nor earth, but wooden. For this is the chest in capacity, and this is the matter of the chest; simply, indeed, of that which is simply, but of this particular chest, this particular wood. Indeed, if there is something which is first, and which is no longer denominated from another, this is the first matter. Thus, if earth is aerial, but air not fire, but fiery, fire in this case is the first matter, as that which is this particular thing, and which is essence. For in this that which is *universal* † and a *subject* differ, that the one is this particular thing, and the other not. Thus man, body, and soul, are each the subject of passions; but passion is the being a musician, and the being white. However, when music is ingenerated, that is not called music, but a musician; and man is not called whiteness, but white; nor walking or motion, but that which walks or is moved. In things, therefore, which are thus denominated that which is left is essence. But in things which are not so denominated, but of which a certain form and this particular thing are predicated, that which is left is matter, and a material essence. And, indeed, it very properly happens that the one is predicated of the other, both according to matter and passions; for both are indefinite. And thus we have shown when a thing may be said to be in capacity, and when not.

C H A P. VIII.

BUT since we have shown in how many ways *the prior* is predicated, it is evident that energy is prior to capacity. I mean not only that definite capacity which is called the principle of mutation in another so far as another, but in short every principle of motion and rest. For nature ‡ is in the same genus with

* Viz. Seed while in the vessel.

† According to Alexander, by *universal* here, Aristotle means every predicate, whether it be essence or accident; but by *subject* he means essence.

‡ Aristotle in his *Physics* defines nature to be the principle of motion and rest of that in which it is primarily and essentially inherent.

capacity ; since it is a motive principle, yet not in another, but in itself, so far as it is itself. But energy is prior to every thing of this kind, both in definition and essence. It is also in a certain respect prior, and in a certain respect not prior, in time. That it is therefore prior in definition is evident. For that which primarily possesses power, on that account possesses it, because it is capable of energising. Thus, that is fabricative which is able to build ; that is vivive which is able to see ; and that is visible which is capable of being seen. The same reasoning also applies to other things. So that it is necessary that the definition and knowledge of energy should precede the definition and knowledge of capacity.

Energy is also prior in time to capacity in the same species. For that antecedes in time which effects the same thing in species, but not in number. But my meaning is this, that of this particular man who is now in energy, and of this corn, and this horse, and of that which sees, the matter, and the seed, and the vivive power, are prior in time ; these being in capacity, man, corn, and that which sees, but are not yet these in energy. But other things which are in energy, and from which these are generated, are prior to these in time. For always, from that which is in capacity, that which is in energy is generated, through that which is in energy. Thus, from man man is generated, from a musician a musician, something first always moving. But that which moves is now in energy. However, in what we have said concerning essence, we have shown that every thing which is generated is generated from something, and by something, and that this is the same in species. Hence it appears to be impossible that there should be a builder who has never built any thing, or a harper who has never played on the harp. For he who learns to play on the harp learns to play by playing on the harp ; and the rest in a similar manner. Hence that sophistic argument originates, that some one not possessing science will produce a scientific effect. For he who learns does not possess science. But in answer to this we reply, that, of that which is in generation, or passing into existence, something is already generated ; and, in short, of that which is in motion, something is moved, as we have demonstrated in our books* concerning Motion. This being the case, it is perhaps also

* Aristotle, by his books On Motion, means the last books of his Physics, in which he demonstrates, *That every thing which is in motion was prior to this moved ; and, That every thing which is now moved was prior to this in motion.* These two propositions are demonstrated by Proclus in his first book On Motion, as follows :

“ I. Every

also necessary that he who learns should possess something of science. And from this also it is evident that energy is thus prior to capacity, both according to generation and time.

It is likewise prior in essence. In the first place, because those things which are posterior in generation are prior in form and essence; as a man is prior both to a boy and seed*: for the one now possesses form, but the other does not. And in the next place, because every thing which is generated proceeds to a principle and an end. For, that for the sake of which a thing subsists is the principle; but generation is for the sake of the end. And the end is energy; and power or capacity is received for the sake of this. For animals do not see in order that they may have sight; but they have sight in order that they may see. In like manner, men possess the capacity of building that they may build, and of contemplating that they may contemplate; but they do not contem-

" I. Every thing which is in motion was prior to this moved.

" Let the magnitude A B be in motion in a first time H R, and let this first time be divided in the point K. Something, therefore, of the magnitude A B was moved; and, indeed, in the whole time H R it was in motion, but in the time H K it was moved. For an instant, or *the now*, is the boundary of the time H K. But in this, to have been moved is possible, but to be in motion is impossible. In a similar manner also, by dividing the time H K, we may demonstrate that the having been moved must be prior to the being in motion. For *the now* is in every time, and consequently the having been moved. Q. E. D.

" II. Every thing which is now moved was prior to this in motion.

" Let there be some thing which has been changed from A into B. Either, therefore, it was changed in time, or in an instant. But if in an instant, it must also have been through the same instant, in A and B at the same time. For if it is according to one instant in A, and according to another in B, there will be time between the two; for an indivisible is not contiguous to an indivisible. It was changed, therefore, from A to B in time. But all time is divisible. So that it was changed in the half of that time, and in the half of that half, and so on *ad infinitum*. Every thing, therefore, which is now moved was prior to this in motion. Q. E. D."

* " For, as the architect (says Alexander) first forms the house in himself, then lays the foundations, and afterwards builds the walls and the roof; so nature, looking to man, for instance, as a mark (since she operates for the sake of something, as Aristotle demonstrates in the third book of his Physics), first produces the genital seed, and the female menses, afterwards the heart, then the liver, after this the flesh, nerves, and bones, then the boy, in the next place the youth, and last of all the man ||. Thus, things which are posterior in generation are prior by nature; but things posterior by nature, as seed and the menses, are prior to us. Hence, the man is by nature prior to the boy, and the boy to seed.

|| The seven ages of man were denominated by the Greeks as follows: *βρεφος, παῖς, Ἰουβενῆς, νεὸς, ἀνὴρ, ἡλικιωτής, γέρων*. Which I thus translate: The infant, the boy, the lad, the youth, the man, the elderly man, and the old man.

plate

plate that they may possess the power of contemplating, except those who meditate. These, however, do not perfectly contemplate; but they either contemplate in a certain respect, or they have no occasion for contemplation. Further still: matter is in capacity, because it may arrive at form. But when it is in energy, then it is in form; and a similar reasoning takes place in other things, and of which the end is motion. Hence, as teachers, when they exhibit their disciple energising, think that they have accomplished the end of teaching, this is also the case with nature. For, if it were not so, a circumstance like the Hermes of Passô * would take place; since it would be manifest, whether science is internal or external, as was the case with his Hermes: for a work is the end, and energy is a work. Hence the word energy is denominated from work, and tends to *entelecheia*. But since the last of some things is the use, as of sight seeing, and no other work besides this is produced by the sight, but by certain things something else is produced, as by the building art, besides building, a house is produced; yet, nevertheless, energy will be the end of capacity in both these instances, though it is more the end of it in the latter than the former. For building is in that which is built, and at the same time is *generated*, and *is* with the house. Of such things, therefore, of which that which is generated is something besides the use, of these energy is in that which is made. Thus, for instance, building is in that which is built, and weaving in that which is woven; and in a similar manner in other things. And, in short, motion is in that which is in motion. But with respect to things of which there is no other work besides energy, in the things themselves energy subsists. Thus, seeing is in him who sees, and contemplation in him who contemplates, and life is in the soul. Hence felicity

* The history of Passô, according to Alexander, is as follows: "The statuary Passô had represented in a certain stone the form of Mercury, and Mercury was seen in the stone; but whether it was within or without the stone was uncertain. It could not be said to be external to the stone, because, if it were, the stone must have been carved, and would have possessed inequalities; but the whole was as smooth as a mirror. But neither could it be said to be within the stone. For if, in the stone in which Mercury was represented, there had been any commissures or joinings, it might have been said that Mercury had been carved in another stone, and had been afterwards inclosed in very smooth stones placed upon it, and that, these being pellucid, it could be seen through them; but as the stone was every way continuous and one, and had no joining, this could not be said to be the case. It was, therefore, uncertain, whether the Mercury was within or without the stone. It was dubious whether it was external, on account of the equality of the stone; and also, whether it was internal, because it could not be conceived how within one continued stone Mercury could be fashioned."

civ

city also is in the soul; for it is a certain life. So that it is evident that essence and form are each of them a certain energy. And according to this reasoning, it is also manifest that energy is prior in essence to capacity: and, as we have said, one energy always precedes another in time, as far as to the energy of that which first eternally moves.

Energy, indeed, is prior to capacity in a more principal and excellent manner. For things eternal are prior in essence to things corruptible; but nothing eternal is in capacity. The reason of which is as follows:—Every power or capacity is at the same time a capacity of contradiction: for that which is not capable of subsisting will not subsist in any thing. But it is possible that every thing endued with capacity may not energise. Hence, that which is capable of being may both be and not be. The same thing, therefore, is capable both of subsisting and not subsisting. But that which is capable of not subsisting may not subsist. And that which may not subsist is corruptible, either simply, or it is not this very thing which it is said to be, either according to place, or according to quantity, or according to quality; but it is simply corruptible according to essence. No one, therefore, of things simply incorruptible is simply being in capacity. Nothing, however, hinders but that it may be so in a certain respect, either according to quality or place. Neither, therefore, things which are simply, nor things which have a necessary subsistence, are in capacity, but all these are in energy; and these are first natures: for, if these were not, nothing would be. Nor, again, if there is a certain motion which is perpetual, is such a motion in capacity. Nor, if that which is moved is perpetual, is it moved according to capacity, unless so far as it proceeds from this to that boundary. Nothing, however, hinders but that it may possess a capacity* of this kind. Hence, if the sun, and stars, and all heaven, perpetually energise, there is no occasion to fear, as certain natural philosophers have feared, that they will ever stand still. For they are not wearied in accomplishing this; since their motion does not subsist about the capacity of contradiction (as is the case with corruptible natures), so as to render the continuity of their motion laborious. For an essence which is matter and capacity, and which does not subsist in energy, is the cause of this.

But those natures which subsist in mutation, as, for instance, earth and fire, imitate incorruptible natures†. For these too always energise; since

* Instead of *τὸν οὐρανόν* I read *τὸν οὐρανὸν διὰ δύναμιν*.

† Viz. The *wholes* of the sublunary bodies, fire, air, water, and earth, are immortal. For art
accounting

since they possess motion essentially, and in themselves. But all the other powers about which we have discoursed are conversant with contradiction. For that which is able to move in this particular manner is also able not so to move. I mean by the other powers, such as are rational: but the irrational powers will be conversant with contradiction, through being present, and not being present. If, therefore, there are certain natures or essences of such a kind as those who are skilled in disciplines assert ideas to be, some one will be much more knowing than science itself; and something will be much more moved than motion itself†. For the former will be rather energies, but the latter are the capacities of the former. It is evident, therefore, that energy is prior both to capacity and to every mutable principle.

C H A P. IX.

FROM hence also it is evident that energy is better and more truly excellent than capacity which is excellent. For, such things as are said to be capable are also capable of contraries. Thus, it is the same thing which is said to be capable of health and sickness, and at the same time. For there is the same capacity of acquiring health and sickness, rest and motion, and of building and destroying a house; and it is also the same capacity, by which a house may be built, and may be thrown down. The capacity, therefore, of effecting contraries subsists at the same time, but to effect contraries at the same time is impossible. It is also impossible that contrary energies should be present at one and the same time, as, for instance, to be well, and to be ill. So that it is necessary that one of these should be good. But to be capable is equally accommodated to both, or to neither. Energy, therefore, is the more excellent of the two.

In things evil, however, it is necessary that the end and energy should be worse‡ than capacity: for it is the same thing which is capable of effecting

account of these wholes, which form one of the most important parts of the philosophy of Aristotle and Plato, but the theory respecting which appears to have been utterly unknown to Dr. Gillies, see the Introduction to my translation of the *Timæus* of Plato.

† This is true only of ideas considered according to their ultimate participations.

‡ For the capacity of evil, says Alexander, is mingled with the capacity of good; but the energy of evil is not mingled with any energy of good.

both

both contraries. It is evident, therefore, that evil is not any thing besides things themselves. For evil is by nature posterior to capacity *. Hence, in things

* As Aristotle, by asserting that evil is something naturally posterior even to capacity, accords with the doctrine of Plato on this subject, the following Platonic account of evil is subjoined for the sake of the philosophic reader.

The nature of evil then is involved in so much obscurity, that some of the antients were induced to believe that it had no kind of existence whatever; others, on the contrary, admitted its existence, indeed, but at the same time asserted that there was no such thing as providence; and others, who acknowledged a providence, believed, in consequence of this, that all things are good: for, if divinity was willing that evil should exist, how can he be good? since every thing which is essentially good benefits all things, in the same manner as that which is essentially hot imparts heat; but it is not lawful for that which is good to produce any thing else than good. But, if divinity was not willing that evil should exist, how is it possible that it can have a subsistence? For, if this were admitted, something would exist contrary to the will of the father of all things.

In answer to this doubt it must be observed, that the habitude or relation which divinity has to things differs from that of ours; and again, things are related to divinity in a manner different from what they are to us; for there is one kind of relation of wholes to parts, and another of parts towards each other. With reference to divinity, therefore, nothing is evil, not even among things which are called evils; for these he employs to beneficent purposes. But, on the other hand, with respect to partial natures, there is a certain evil with which they are naturally connected; and the same thing is evil to a part, but to the universe, and to wholes, good; for, so far as a thing has being, and so far as it participates of order, it is good.

To be convinced, however, that there is no such thing as perfect evil, it will be necessary to make the following division: Of all things in the universe, some are wholes, *i. e.* natures which participate of one perfect form; and others are parts. And of parts, some eternally preserve their own good, such as partial intellects and partial dæmons, but others are not always able to preserve it; and of these, some are moved by other natures, but others are self-motive. And of the self-motive natures, some possess evil established in the will, but others extend it to action. But as to wholes, they are entirely good, not only supplying themselves, but likewise parts, with good. And as to such things as are parts but preserve their proper good, these possess good secondarily and partially; but parts which are moved by others, and derive their subsistence from others, are likewise suspended from the providence of the natures through which they subsist, and are transmuted by them in a becoming manner: and this is the case with such bodies as are generated and corrupted. For, if it is necessary that there should be generation, it is likewise necessary that there should be corruption, since generation subsists according to mutation, and is itself a certain mutation; but if there is corruption, it is also necessary that the unnatural should be introduced among things. As, therefore, that which is corrupted is indeed corrupted with respect to itself, but is not destroyed with respect to the universe, (for it becomes either air or water, or some one of the other particulars into which it is changed,) in like manner that which is contrary to nature is disordered with respect to itself, but is orderly and regular with respect to the universe.

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But

things which subsist from the principle, *and in eternal natures*, there is neither evil, nor error, nor corruption. For corruption belongs to things evil. Diagrams also are found to be in energy; but they are found to be so by division. For if they were divided they would be manifest. But now they are inherent in capacity. Why has a triangle angles equal to two right? Because the angles which are about one point are equal to two right. If, therefore,

But as to such natures as are partial, but self-motive, and which energising according to externals cause evil to take place with respect to themselves, this also is good in a certain degree with reference to divinity; for though the action arising from a depraved will is not simply good, yet it is good so far as it partakes of divine justice, and is indeed beneficial to this or that particular life. For, of goods, some subsist as good to all things, others as good to things which differ according to species, and others as good to individuals considered as individuals. Thus, for instance, hellebore is neither good to all things, nor yet to all bodies, nor to all bodies that are diseased, but to a body with a particular disease, and is from a certain principle conducive to health. Every intemperate and unjust action, therefore, is good to those by whom it is committed, so far as it is attended with punishment from divine justice. For, again, of goods, some are precedent and others preparative; and the precedent are such as are desirable for their own sakes, but the preparative for the sake of other things. The punishment, therefore, which is inflicted by divinity on evil actions is a preparative good; for the design of divinity in punishing is to purify the soul, and properly dispose it for the reception of the highest good. Hence unjust actions, by being attended with punishment, become the means of good to the offending soul, but, simply considered, are very remote from the nature of good.

In short, there is no evil which is not in a certain respect good, because the beneficent illuminations of providence extend to all things, and even irradiate the dark and formless nature of matter. But if any one should ask, whether divinity was willing that there should be evil; or was unwilling? we reply, that he was both willing and unwilling: for, considered as imparting being to all things, he was willing; since every thing in the universe, which has in any respect being, proceeds from a demiurgic cause. But he was not willing, considered as producing all things good; for he concealed evil in the utility of good. Evil, therefore, neither subsists in intellectual natures (for the whole intellectual order is void of evil) nor in souls which rank as *wholes*, nor in bodies which are *wholes*; for all wholes are free from evil, on account of their perpetually subsisting according to nature. Hence evil must either subsist in partial souls or partial bodies; but yet not in the essences of these, because all their essences are of divine origin; nor in their powers, for these subsist according to nature. It remains, therefore, that evil must subsist in their energies. But, among souls, it cannot be in the energies of such as are rational, for all these aspire after good; nor in the energies of such as are irrational, for these energise according to nature; but it must take place *in the privation of symmetry between the two*. And with respect to bodies, evil can neither subsist in their form, for it desires to rule over matter; nor in matter, for it aspires after the supervening irradiations of form; but *in the asymmetry of form with respect to matter*. And from hence it is evident that every thing evil subsists according to a *parypostasis*, i. e. has a shadowy kind of being; that at the same time it is coloured.

therefore, the line about the side * is produced, this will immediately become evident. Why universally is the angle in a semicircle a right angle? Because there are three equal lines; two into which the base is divided, and that which is raised upon it from the middle point. When this construction is seen by him who previously knew it, he will also immediately perceive that which follows from it. It is evident, therefore, that mathematical entities are in capacity, and that they are discovered when reduced into energy. But the cause of their being reduced into energy is this, that intellection is energy. So that capacity proceeds from energy: and on this account those who act know. For energy according to number is posterior in generation.

C H A P. X.

SINCE, therefore, being and also non-being are partly denominated according to the figures of the categories, and partly according to the capacity or energy of these, or contraries; and since that which is most principally being is true or false, and this in things themselves consists in composition or division; so that he asserts the truth, who is of opinion that a thing which is divided is divided, and that a thing which is a composite is a composite; but he speaks falsely who, either when things are, or when they are not, speaks of them in a manner contrary to that in which they subsist;—this being the

coloured by good; that consequently all things are good through the will of divinity; and that even evil is necessary to the perfection of the universe, as without its shadowy nature generation could not subsist.

From all that has been said, therefore, it follows that evil is something contrary to intention and nature, to cause and principle, to end and bound, to will and subsistence. It is, therefore, privation and defect, imbecility and incommensuration, error, and deviation from design, void of beauty, life and intellect, irrational and imperfect, without a foundation and without a cause, indefinite and unprolific, sluggish and inefficacious, deprived of order and similitude, infinite, dark and unessential.

* What Aristotle now says, will be evident by referring to the thirty-second proposition of the first book of Euclid's Elements. For by the *line* about the side he means the line BC (I refer to Barrow's Euclid); and by the *side*, the line AC. If the line BC, therefore, be produced to D, it follows that the two angles which stand about the point C are equal to two right angles.

By referring also to the thirty-first proposition of the third book of Euclid, what Aristotle in this place darkly asserts, and (as Alexander says), as it were enigmatically, will become apparent. For the three equal lines are AB, AD, and DC, and that which is raised upon it from the middle point is DB.

F f 2

case,

case, let us consider what that is which is called true or false. For it is not that you are white because we truly think that you are white; but, because you are white, we who assert this, assert the truth. If, therefore, certain things are always composites, and cannot be divided, others are perpetually divided, and can never become composites, and some become the recipients of contraries: to be, indeed, is to be a composite and to be one thing; but not to be, is not to be a composite, and to be more than one. About things contingent*, therefore, the same opinion and the same discourse become false and true; and it happens that at one time they are true and at another false. But about things which cannot subsist differently, the true is not at one time generated, and at another time the false, but these are always true and false.

With respect to incomposite natures, therefore, what is the being or non-being, what the true and the false of these? For it is not any thing composite, so as *to be*, when it is joined together, and *not to be*, when it is divided; just as white wood, or the diameter of a square which is incommensurable with its side: nor will the true and the false be similarly inherent in things incomposite. Or shall we say, that as neither the true in these is the same, so neither is their being the same? But the one indeed is true, and the other false. *For in these truth is obtained by contact † and assertion.* For affirmation

* Viz. Which may become the recipients of contraries.

† Intellect obtains the truth respecting incomposite or simple essences, by a simple extension or projection of its visive power, in the same manner as the sight perceives colours. As sight, too, does not affirm any thing concerning colours, but only beholds them, in like manner intellect does not affirm any thing respecting the simple objects of its vision. For affirmation is asserted of that which is a composite from a subject and predicate. When, therefore, it comes into contact with them, it asserts that which is true; but when it does not, and has no perception of them, it is said to be ignorant of them, but not to be deceived. For the sight, when it does not perceive colours by night, is not said to be deceived, but to be ignorant of them: for deception is usurped in composite natures, when a thing is said to be something which it is not, as if wood which is not white should be said to be white, or that should be said not to be which is; as, for instance, that man is not an animal. Truth, therefore, is obtained in simple essences by contact and assertion, but it is not possible to be deceived respecting them. For deception and fallacy are conversant with composite natures, when what is absent from a thing is said to be present with it, or when what is present is said to be absent.

I only add, that this simple and self-visive energy of intellect, by which it speculates things themselves, and by intuition and contact becomes one with the object of its perception, is called by Plato in the *Phædo*, *θεῖος λόγος*, *divine reason*, which many, and among the rest Dacier, from not understanding the philosophy of Plato, have erroneously and with barbaric arrogance translated a *divine revelation*.

and

and assertion are not the same. *But not to pass into contact with them, is to be ignorant.* For we cannot be deceived about the essence of a thing, unless by accident. And in a similar manner with respect to incomposite essences: for we cannot be deceived about these. All of them too are in energy, and not in capacity. For, if they were in capacity, they would be generated and corrupted: but now being itself is not subject either to generation or corruption. For it would be generated from something. *But with respect to such things as are beings and in energy, about these it is not possible to be deceived, but they are either intellectually apprehended or not.* But concerning these essence is investigated, whether it is of such a kind or not.

Moreover, after one manner being is considered as true, and non-being as false; if it is a composite, as true, but if not a composite, false. But after another manner, if it thus subsists, it is; but if not thus, it is not. Truth consists in the intellectual apprehension of these; but the false is not deception but ignorance, though not an ignorance which resembles blindness. For blindness is just as if some one should be wholly deprived of the intellectual power. It is evident also, that there will not be occasionally deception concerning things immovable, if they are considered as immovable. Thus, he who does not consider a triangle as mutable, will not think that at one time it has angles equal to two right, and that at another time it has not. For if this were the case it would be changed. But he may entertain this opinion of one thing, and not of another. Thus, for instance, he may think that no even number is a first number, or that some numbers are first numbers, and others are not. But he cannot entertain this opinion about one thing in number. For he will no longer think that it is now this thing, and at another time will be something else: but he will either assert that which is true or false concerning it, as of a thing which always subsists after this manner.

ARISTOTLE'S

ARISTOTLE'S METAPHYSICS.

B O O K X.

C H A P. I.

THAT *the one** is predicated multifariously was before observed by us, when we explained in how many ways every thing is denominated. But since it is manifoldly predicated, the modes of things primarily and essentially denominated one, are, when collected into one sum, four. For that which is continued either simply, or especially by nature, and not by contact, nor by a bond, is one. And that is more one and in a manner prior to these, of which the motion is more indivisible, and more simple. Further still: that is a thing of this kind and more so, which is a whole, and has a certain form and species; especially if there is a thing of this kind by nature and not by violence, (as things which are one through glue, or a nail, or a bond,) and which contains in itself the cause of its continuity. But it is a thing of this kind, through its motion being one, and indivisible in place and time. So that it is evident that, if any thing naturally possesses the principle of the first motion, it is the first magnitude; I mean, for instance, a circular motion; for this is the first of motions. Some things, therefore, are after this manner one, either as continued, or as a whole,

* Concerning *the one*, the subsistence of which is discussed by Aristotle in this book, see my translation of the Parmenides of Plato, the Notes to the thirteenth and fourteenth books of this work, and the Dissertation on Nullities at the end.

But

But some things are called one of which the definition is one. And things of this kind are those of which the intellection is one. But the intellection of that is indivisible, which is indivisible in species or number. That which ranks among particulars, therefore, is indivisible in number; but that is indivisible in species, which is indivisible in that which is known, and in science. Hence that will be the first one, which is the cause to essences of unity. In so many ways, therefore, is *the one* predicated, viz. that which is continuous by nature, a whole, particular, and universal. But all these are one; because of some the motion is indivisible, but of others the intellection, or the definition.

This, however, ought to be considered, that it is not the same thing to inquire what things are one, and what the essence and definition are of *the one*. For *the one* is predicated in so many ways, and each of these will be one, in which any one of these modes is inherent. But the essence of *the one* will sometimes accord with one of these, and sometimes with another, which is also nearer to the name: but those* are one in capacity. Just as, if it were requisite to speak of element and cause, it would be necessary to distinguish the things, and to assign the definition of the name. For fire perhaps, or the infinite itself, or something else of this kind, in a certain respect is, and in a certain respect is not, an essential element. For there is not the same essence of fire and of an element; but so far as fire is a certain thing and nature, it is an element. But the name signifies that this particular thing happens to it, because something subsists from this, as that which is primarily existent. And the like takes place with respect to cause and *the one*, and every thing else of this kind. Hence the essence of *the one* consists in being indivisible, viz. in being this particular thing, and inseparable either in place, or species, or the dianoëtic part, or in that which is a whole and definite.

But the essence of *the one* especially consists in this, that it is the first measure of every genus, and principally of quantity. Hence also it appears to have acceded to other things. For that is a measure by which quantity is known. But quantity, so far as quantity, is known by *the one*, or number. And every number is known by *the one*. So that every quantity, so far as quantity, is known by *the one*, and that by which it is first known is *the one*.

* That is to say, those natures which have been enumerated, and of which *the one* is predicated.

itself.

itself. And hence *the one* is the principle of number so far as number. Hence also, in other things, that is called a measure by which each particular is first known, and the measure of every thing is one, in length, in breadth, in depth, in gravity, and in celerity. For gravity and celerity are common in contraries: for each of these is twofold. Thus, for instance, that is heavy, which has any momentum whatever, and that which has an excess of momentum. That also is swift which has any motion whatever, and that which has an excess of motion. For there is a certain celerity of that which is slow, and gravity of that which is light. But in all these, that which is the measure and the principle is a certain one, and something indivisible. Thus, in lines, the measure of a foot is used as indivisible. For every where one certain measure and that which is indivisible are investigated. But this is the simple either in quantity or quality. Hence, where it appears that nothing is to be taken away or added, this is accurately the measure. Hence, too, the measure of number is the most accurate of all measures: for the monad is considered as every way indivisible. But in other things a measure of this kind is imitated. For, from a stadium and a talent, and always from that which is greater, more may be taken away than from that which is lesser. Wherefore that among sensibles which is first considered as indivisible, is by all men made the measure of things moist and dry, of weight and magnitude: and they then think that they know the quantity, when they know through this measure. Motion, too, is measured by a simple and the most rapid motion. For this has the shortest time. Hence, in astronomy, a one of this kind is the principle and the measure. For the motion of heaven is supposed to be equal and most swift, by which other motions are determined. In music, likewise, diesis is the measure, because it is the least sensible sound: and in voice a letter. And all these are a certain one; yet not so as that *the one* is something common to them, but in such a manner * as we have before shown.

A measure, however, is not always one in number, but is sometimes more than one; as, for instance, two dieses, which are not understood according to the hearing, but in definitions. Voices † also are many by which we mea-

* Viz. As things which are denominated from, and with reference to, the one.

† Alexander well observes, that Aristotle here by voices means the elements of speech, *a, b, c, &c.*

sure;

sure; and a diameter is also measured by two things*; and this is the case with a side, and with all magnitudes. And thus the measure of all things is *the one*; because we know those things from which essence consists, by making a division either according to quantity, or according to form. Hence *the one* is indivisible, because the first of every thing is indivisible; but every thing is not similarly indivisible, as, for instance, a foot and the monad. But the latter is in every respect indivisible, while the former is assumed indivisible with respect to sense, as we just now observed. For, perhaps every thing continued is divisible; but measure is always of a kindred nature. For magnitude is the measure of magnitudes and of individuals, length of length, breadth of breadth, sound of sounds, weight of weight, and monad of monads. For in this manner it is requisite to speak, and not to call number the measure of numbers. Though this would be necessary if measure is to be similarly assigned. But he who entertains this opinion does not think similarly, but just as if he should think that monads are the measure of monads, and not the monad. However, number is a multitude of monads: and on the same account we say that science is the measure of things, and also sense, because we know something through these; for they are measured rather than they measure. But it happens to us just as if, another measuring us, we should know the quantity we contain, because he so many times applies to us a cubital measure. But Protagoras says that man is the measure of all things, just as if he had said that he who possesses scientific knowledge, or sensible perception, is a measure; and this because the one possesses sense and the other science, which we say are the measures of their subjects. Hence, though asserting nothing excellent, he appears to say something pertinent. That the essence of *the one*, therefore, consists in being a certain measure, and the most principal measure of quantity, and especially according to the name by which it is distinguished from other things, and that it is, in the next place, the measure of quality, is evident. But a measure will be of one kind, which is indivisible according to quantity, and of another, which is indivisible according to quality. So that *the one* is indivisible either simply, or so far as it is one.

* Thus, for instance, says Alexander, if a diameter is measured by the finger, finger is two-fold, viz. the very nature and form of the finger, and the finger itself which measures the diameter.

C H A P. II.

IT is now requisite to inquire in what manner *the one* subsists with respect to its essence and nature, as in the doubts which we formerly made we discussed what *the one* is, and how we ought to conceive respecting it; whether *the one itself* is a certain essence, as the Pythagoræans formerly said, and Plato afterwards, or rather a certain nature is subjected to it; and how it ought to be considered after a manner more known, and whether the conceptions of natural philosophers concerning it are to be admitted. For, of these, one asserts that friendship is *the one*, another air, and another the infinite. *But if nothing of universals can be essence**, as we have asserted in our discourse concerning *essence and being*, nor this very thing essence can be one certain thing separate from the many (for a thing of this kind is something common, and alone subsists as a predicate)—this being the case, it is evident that *the one* is not essence. For *being* and *the one* are the most of all things universally predicated. So that neither are genera certain natures and essences separable from other things; nor can *the one* be genus, through the same causes by which neither being nor essence is genus.

Further still: it is necessary that the like should take place in all things. But *being* and *the one* are predicated equally. Wherefore, since in qualities there is a certain one, and a certain nature, and in a similar manner in quantities, it is evident that what *the one* is, must, in short, be investigated, as also what being is; so that it is not sufficient to assert that this very thing is the nature of it. In colours also there is one colour, as, for instance, the white; afterwards, other colours appear to be generated from this and black. But black is a privation of white, in the same manner as darkness of light; for this is a privation of light. So that, if beings were colours, beings would be a certain number. But of what? Evidently of colours. And *the one* would be a certain one, as, for instance, the white. In like manner, if beings were melodies, they would indeed be a number, but of diesis †; but the essence of them would not be number; and *the one* would be something, the essence of which would not be *the one*, but diesis. In a similar manner too, with respect

* This is apparently shown by Aristotle in the seventh book of this work. See the Introduction to this work.

† i.e. The smallest sensible sound.

to

to sounds, if all beings were sounds, they would be the number of the elements, and *the one* would be a vocal element. And if beings were right-lined figures, they would be the number of figures, and *the one* would be a triangle: and there will be the same reasoning in the other genera. So that if in participated properties, in qualities, in quantities, and in motion, there are numbers, and there is a certain one in all these, number being the number of certain things, and *the one* a certain one, but this is not the essence of *the one*, it is necessary that the like should take place in essences. For this will similarly happen in all things. That *the one*, therefore, is a certain nature in every genus, and that this very thing *the one* is not the nature of any thing, is evident. But, as in colours we investigate one colour as *the one*, so in essence we investigate one essence as *the one itself*. Moreover, that in a certain respect *the one* and *being* signify the same is evident, from this, that *the one* equally follows the categories, and is not in any of them; as, for instance, it is neither in substance nor in quality, but subsists in a manner similar to being. It also follows from this, that in predication one man does not add any thing else besides man, as neither is being any thing besides substance, or quality, or quantity: and the being of *the one* * is the same as the being of some individual thing.

C H A P. III.

THE ONE and THE MANY are opposed multifariously; according to one of which modes *the one* and *multitude* are opposed as indivisible and divisible. For that which is either divided or is divisible is called a certain multitude; but that which is indivisible or is not divided is called one. Since, therefore, oppositions are fourfold, and one of these is denominated according to privation, these indeed will be contraries, and will neither be denominated as contradiction nor as relatives. But *the one* is denominated and rendered apparent from its contrary, viz. the indivisible from the divisible, because multitude and the divisible are more manifest to sense than the indivisible. So that, through sense, multitude is prior in definition to the indivisible. But the same, the similar, and the equal are of *the one*, as we have shown† in the divi-

* It must be carefully observed that this is true of *the one* which subsists in sensibles.

† Aristotle here, according to Alexander, refers to his treatise *On the Good*, in which, says he, by division, he reduces all contraries into *multitude* and *the one*. This work, as we have before observed, is unfortunately lost.

sion of contraries; but the different, the dissimilar, and the unequal, are of multitude. But since *same* is predicated multifariously, it is predicated in one way according to number, which we sometimes call *itself*; but in another way, if a thing is one in definition and number. Thus, for instance, you are one with yourself, both in form and matter.

Further still: those things are said to be the same, of the first * essence of which there is one definition. Thus, equal right lines are the same, and equal and equal-angled quadrangular figures, though they are many in number; for in these equality is unity. But things are said to be similar, which are not indeed simply the same, nor without difference according to their subject-essence, but yet are the same according to form. Thus, a greater square is similar to a lesser, and also unequal right lines. For these are indeed similar, but are not simply the same. But some things are called similar, if they have the same form, and in which though the more and the less are ingenerated, yet the things themselves are neither more nor less. Other things are so denominated, if there is the same passion and one in species. Thus, that which is very white and that which is less white are said to be similar, because the form of them is one. But some things are called similar, if they have more of the same things than of such as are different, either simply, or which are more obvious to sense. Thus, tin is more similar to silver than to gold; but gold is similar to fire, so far as it is yellow and ruddy. So that it is evident that the different and the dissimilar are denominated multifariously.

The different also and the same have an opposite mode of subsistence. Hence, every thing with relation to every thing is either the same or different. But that is said to take place, if the matter and definition are not one. Hence, you, and that which is next to you, are different. But the third signification of the similar is when things subsist as in mathematical species. All such things, therefore, as are denominated one and being, are, with reference to each other, different or the same. For there is not any contradiction of the same †. Hence, it is not asserted of non-entities, but of all beings; but *not the same* is also predicated of beings. For same and different are naturally either one, or not one, which non-one is both being and one.

* By the *first essence* here, we must understand *the proximate essence*.

† That is, says Alexander, same and different are not opposed contradictorily, so as to pertain to non-entities also, and not to beings alone.

Different,

Different, therefore, and same, are after this manner opposed. But *difference* is not the same with *diversity*. For it is not necessary that a thing which is *another*, and that with relation to which it is another, should be another by a common something. For every thing whatever which is a being is either the same or different. But that which is different from something is different by something*. So that it is necessary that there should be something the same by which they differ. But this something the same is either genus or species: for every thing which differs, differs either in genus or species. And those things, indeed, differ in genus, of which neither the matter is common, nor the mutual generation; as, for instance, those things of which there is another figure of predication; but those things are different in species, of which there is the same genus. But genus is said to be that by which both the things that differ are called the same according to essence. So that contraries are things different, and contrariety is a certain difference. But that this is well asserted by us is evident from induction. For all things appear to *differ*, and not only to be *diverse*; but some are diverse in genus, and others in the same co-ordination of predication. So that they are in the same genus, and are the same in genus†. But we have elsewhere shown what kind of things are the same or-different in genus.

C H A P. IV.

BUT since it happens that things which differ from each other differ more or less, there is a certain greatest difference, and this I call contrariety. And, that this is the greatest difference, is evident from induction. For things which differ in genus have not a way to each other, but are much distant, and cannot be compared together. But to things which differ in species the generations are from contraries, as from extremes. And the last interval is the greatest: so that the interval of contraries is the greatest. But the greatest in every genus is the perfect: for that is greatest which cannot be transcended; and that is perfect beyond which nothing can be assumed. For perfect difference has an end, just as other things from having

* Viz. Whatever differs has something in common with that from which it differs.

† In the printed text *τῷ αὐτῷ*; but as the text of Alexander has *γενεῖ (τῷ γένει)*, I have adopted this reading in my version. Besides, the concluding sentence of this chapter favors this alteration.

an end are called perfect. But nothing is beyond the end : for this is the last in every thing, and comprehends that of which it is the end. Hence, nothing is beyond the end, nor is the perfect indigent of any thing. That contrariety, therefore, is perfect difference, is from hence evident.

But, since contraries are predicated multifariously, the perfect will follow in such a manner as accords with their subsistence as contraries. But, this being the case, it is evident that there cannot be many contraries to one thing. For neither will there be any thing more extreme than that which is last, nor of one interval will there be more than two extremes. And, in short, if contrariety is difference, but difference is the difference of two things, this will also be the case with perfect difference. But it is necessary that the other definitions also of contraries should be true : for perfect difference differs in the greatest degree. For we have shown that of things which differ in genus and species, nothing external can be assumed, since there is no difference with respect to things beyond genus ; but of these this is the greatest. And things which being in the same genus differ in the greatest degree, are contraries. For the greatest difference of these is that which is perfect. Things also which being in the same recipient differ in the greatest degree, are contraries : for the same matter is the subject of contraries. And, likewise, those things are contraries, which differ in the greatest degree under the same power. For one science is conversant with one genus of things in which perfect difference is the greatest. But the first contrariety is habit and privation ; yet not every privation (for privation is predicated multifariously), but such as is perfect. But other contraries are denominated according to these ; some from possessing ; some from acting, or being effective ; and some, because they receive or reject these or other contrarieties. But if contradiction, privation, contrariety, and relatives are opposed ; but of these contradiction is the first, and of contradiction there is no medium, but there is of contraries, it is evident that contradiction and contrariety are not the same. But privation is a certain contradiction : for, either there is a privation of that which cannot by any means be possessed, or of that which, when it is naturally adapted to be possessed, is not possessed ; and this either altogether, or in some definite manner. For we speak of this multifariously, as we have elsewhere shown. So that privation is a certain contradiction, or a definite impotency, or comprehended together with its recipient. Hence there is no medium of contradiction, but there is a certain medium of privation. For every thing is either equal or
not

not equal, but not every thing is equal or unequal, except alone in that which is the recipient of the equal. If, therefore, generations are in matter from contraries, but they are produced from form and the habit of form, or from a certain privation of species and form, it is evident that every contrariety will be a certain privation, but not every privation perhaps is contrariety. But the cause of this is, that whatever suffers a privation of any thing, may suffer this privation in a manifold respect. For those things are contraries from the extremities of which mutations are produced. This also is evident from induction. For every contrariety has a privation of the other of contraries; but not all things in a similar manner. For inequality is a privation of equality, dissimilitude of similitude, and virtue of vice. But there is a difference, as we have already observed: for one thing is said to suffer privation, if it is alone deprived of something; but another, if it does not possess when it is naturally adapted to possess, as in a certain age, or in that which is principal, or altogether. Hence, of some contraries there is a medium, and a man is neither good nor bad; but of others there is not a medium, but it is necessary that a number should be even or odd. Further still: some things have a definite subject, and others have not. So that it is evident that the other of contraries is always denominated according to privation. But it is sufficient if first natures and the genera of contraries, as, for instance, *the one* and *the many*, are so denominated. For other things are referred to these.

CHAP. V.

BUT since one thing is contrary to one, it may be doubted how *the one* and *the many* are opposed, and how the equal is opposed to the great and the small. For we always speak of the *whether* in opposition; as, for instance, *whether* a thing is white or black; and *whether* it is white or not white. But we do not say *whether* it is man or white, unless from hypothesis, and when investigating, as, *whether* Cleon came or Socrates. This inquiry, however, is not necessary in any genus. For opposites alone cannot subsist together, as is evident in this inquiry, which of the two came. For, if it were possible for both to have come, the interrogation would be ridiculous. But if this were possible, he who makes the inquiry falls into opposition, viz. into *the one* and *the many*; as, for instance, whether both came, or one of the two. But if the inquiry respecting the *whether* is always in opposites (but it is said whether a thing is greater, or lesser, or equal),

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what

what is the opposition with respect to these of the equal? For it is not alone contrary to one of them; nor to both. For why is it rather contrary to the greater than the lesser? Further still: the equal is contrary to the unequal; so that it will be contrary to more than one. But, if the unequal signifies the same thing with both these together, it will indeed be opposite to both; and the doubt will assist those who say that the unequal is the duad. It happens, however, that one will be contrary to two; which is impossible.

Again: the equal appears to be a medium between the great and the small; but contrariety neither appears to be a medium, nor, from the definition of it, is it possible that it should. For it would not be perfect, if it was the medium of any thing, but rather it always has some medium with respect to itself. It remains, therefore, that the equal must either be opposed as negation or as privation. But it is not possible that it can be alone opposed to the great or to the small. For why should it be rather opposed to the great than to the small? Negation, therefore, is privative of both. Hence, *the whether* is predicated with respect to both, but not with respect to either. Thus we do not say, *whether* is it equal or greater? or, *whether* is it equal or less? But *the whether* is always asserted with reference to three things. It is not, however, privation from necessity: for it does not follow that every thing is equal which is not greater or lesser; but this takes place in things in which the greater and the lesser are naturally inherent. The equal, therefore, is that which is neither great nor small, but which is naturally adapted to become great or small; and it is opposed to both, as negative privation. Hence it is a medium. That also which is neither evil nor good is opposed to both, but is nameless. For each is predicated multifariously; and that which is the recipient is not one thing, but rather that which is neither white nor black; though neither is this called one thing. But colours are in a certain respect definite, of which this negation is privatively predicated. For it is necessary that this negation should be brown, or pallid, or something else of this kind. Hence, they are not rightly reprov'd who think that all things are similarly denominated; so that, between a shoe and a hand, the medium is that which is neither a shoe nor a hand, since also that which is neither good nor evil is the medium between good and evil, as if, with respect to all things, there would be a certain medium. It is not, however, necessary that this should happen. For this co-negation of opposites is of things which are naturally adapted to have a certain medium, and a certain interval. But with respect to these there

there is no difference: for those things are in another genus, of which these were co-negations*; so that the subject of them is not one.

CHAP. VI.

IN a similar manner, also, some one may doubt respecting *the one* and *the many*. For, if *the many* are simply opposed to *the one*, certain impossible consequences will happen; for it will either be a small multitude, or small multitudes†, since *the many* is also opposed to *the few*. Besides, two things are many, since the double is multiplex; and thus also two is called double. So that *the one* is few. For, with relation to what are two things many, unless with relation to *the one* and *the few*? For nothing else appears to be less. Further still: what the long and the short are in length, that the much and the few are in multitude, and whatever is *much* is also *many*, and *the many* is *much*. Unless, therefore, something intervenes in continued indefinite quantity, the few will be a certain multitude. So that *the one* is a certain multitude, if it is *the few*. But this is necessary if two things are many. Perhaps, however, *the many* is denominated in the same manner as *the much*, yet as differing, as water which is *much*, but not *many*. But with respect to such things as are divisible, in these *the many* subsists, according to one mode, if the multitude has a transcendence either simply or relatively; and in a similar manner *the few*, when the multitude is deficient. But, according to another mode, *the many* subsists as number, which is alone opposed to *the one*. For thus we speak of *the one* or *the many*; just as if some one should say *one* and *ones*, or *white* and *things white*, and *things measured* with respect to *measure*, and *that which is measured*. Thus, also, things which are manifold are called many: for every number is many, because it is one many, and because each is measurable by one, and is as that which is opposed to *the one*, and not to *the few*. After this manner, therefore, two things also are many; but as having transcendent multitude, or as relatives, or simply considered, they are not many; but two is the first multitude in numbers. Two is, however, simply few; for it is the first multitude having a defect. Hence, Anaxagoras did not speak rightly in asserting, that *all things subsisted together, and were*

* But things of which there are co-negations are subjected to the same genus.

† In the original *ὅλως ἢ ὀλίγα*.

infinite in multitude and smallness: for, instead of *smallness*, he ought to have said *in paucity*. For the few is not infinite; since it does not subsist through *the one*, as some say, but through *two*. They are, therefore, after this manner opposed. But *the one* and *the many* are opposed in numbers, and *the one* is opposed to *the many*, as measure to that which is measured. And these are opposed as relatives, which have not an essential subsistence. But we have elsewhere shown that relatives are denominated in a twofold respect. For some things are so called as contraries, others as science to the object of science, because something else is predicated with respect to it*. Nothing, however, hinders but that *the one* may be less than a certain thing; as, for instance, than *two*. For it does not follow, that if it is less, it is also few. But multitude is as it were the genus of number. For number is multitude, which may be measured by *the one*. And *the one* and *number* are in a certain respect opposed, not as contraries, but, as we have said, in the same manner as certain relatives. For, so far as *the one* is a measure, but *number* measurable, so far they are opposed to each other. Hence, not every thing which is one is number, as, for instance, if there is any thing indivisible. But, though science is in a similar manner denominated with respect to the object of science, yet it is not similarly attributed: for science may appear to be a measure, but the object of science that which is measured. But it happens that every science is the object of scientific knowledge, though not every thing which may be scientifically known is science, because in a certain respect science is measured by the object of scientific knowledge. Moreover, neither is multitude contrary to *the few*; but to this *the much* is opposed, in the same manner as multitude which transcends is opposed to the multitude which is transcended; nor is *multitude* altogether contrary to *the one*. But with respect to *the one*, as we have said, one kind is divisible, and another indivisible, which subsists as a relative, just as science with respect to the object of science, if science were number: but *the one* is a measure†.

* That is, science is a relative, not because it is predicated of him who possesses scientific knowledge, but because the object of such knowledge is predicated with reference to science.

† The Commentary of Alexander on this book extends no further than to the end of this chapter; the remaining part being unfortunately lost.

C H A P. VII.

BUT since it happens that between contraries there is a certain medium, it is necessary that the media should derive their subsistence from contraries. For all media, and the things of which they are media, are in the same genus. For we call those things media into which that which is changed is necessarily first changed. Thus, he who passes from the hypate* to the nete†, if the transition is made in a short time, will first arrive at the sounds which subsist between. And in colours, if any one passes from white to black, he will arrive at the red and the brown before he arrives at the black. And in a similar manner in other things. But a transmutation from one genus to another cannot take place, except from accident; as, for instance, from colour to figure. It is necessary, therefore, that media and the things of which they are media should be in the same genus. But all media are the media of certain opposites; for, from these alone essential mutation subsists. Hence, it is impossible that there should be any medium between things which are not opposites; for otherwise there would be a mutation from things not opposed. But in opposites there is no medium of contradiction. For contradiction is antithesis, and an opposition of which one of the parts is present, without having any medium. But, of the rest, some are relatives, others are privation, and others are contraries. And of those which are relatives, such as are not contraries have not a medium; and this because they are not in the same genus. For, what is there between science and the object of science? There is, however, a medium between the great and the small. But if media are in the same genus, as we have shown, and are media of contraries, it is necessary that they also should be composed from these contraries. For, either there is a certain genus of them, or none. And if there is a genus, and it subsists in such a manner that something will be prior to contraries, those contrary differences will be prior which make contraries as species of genus; for species subsist from genus and differences. Thus, if white and black are contraries, and the one is a segregative, but the other a congregative colour, these very differences themselves, the segregative and the congregative, will have a prior subsistence. So that these contraries are prior to each other.

* The base chord.

† The seventh chord in the harp.

But contraries which are differences are more contraries. The rest also, and the media, will consist from genus and differences. Thus, it is requisite that whatever colours are between white and black should be said to consist from genus (but colour is a genus) and certain differences. But these will not be the first contraries; for otherwise each will be black or white. There are, therefore, other colours. And hence these colours will be the media of first contraries. But the first differences are the segregative and the congregative. So that the first thing to be investigated with respect to such contraries as are not in genus is this, From what the media of them consist. For it is necessary that things in the same genus should be either composed from things impossible in genus, or should be impossibles. Contraries, therefore, are not composed from each other; and hence they are principles. But media are either all things or nothing. From contraries, too, something is generated. So that, before there is a mutation into contraries, there will be a mutation into this: for of each there will be the more and the less. There will therefore be a medium, and this will be the medium of contraries. Hence, all other media are composites. For that which is more than one thing and less than another, is in a certain respect composed from those things of which it is said to be more and less. But since of contraries other things which are prior are not of the same kind, all media will be from contraries. So that all inferiors, and contraries, and media will be from first contraries. That all media, therefore, are in the same genus, and that they are media of contraries, and are composed from contraries, is evident.

C H A P. VIII.

BUT that which is different in species is different from something, and it is necessary that this should subsist in both differences. Thus, if animal is different in species, both will be animals. It is necessary, therefore, that things which are different in species should be in the same genus. But I mean a genus of that kind, by which both are called one and the same, not possessing difference from accident, whether it subsists as matter, or as something different from matter. For it is not only requisite that a common something should be present, as, for instance, that both should be animals, but, that the very animal itself should be different from either, as that the one should be horse, and the other man. Hence, this something common belongs to things different

ferent from each other in species. And hence, too, this will be such a particular animal essentially, and that an animal essentially different; as, for instance, that will be a horse, and this a man. It is necessary, therefore, that this difference should be a diversity of genus. But I call that difference of genus diversity, which makes this very thing to be different. Hence this will be contrariety. And this is evident from induction: for all things are divided by opposites; and it has been shown that contraries are in the same genus. For contrariety is perfect difference. But every difference which is in species is something belonging to a certain thing. So that this is the same, and is genus in both. Hence all contraries are in the same co-ordination of predication, which differ in species and not in genus, and are especially different from each other. For the difference between them is perfect, and they are not at the same time generated together. Difference, therefore, is contrariety. For this is to be different in species, viz. for things which are individuals, when they are in the same genus, to possess contrariety. But things are the same in species, which subsisting as individuals have not contrariety. For in division and in media contrarieties are produced, before we arrive at individuals. So that it is evident that none of those things which accord as species of genus, is, with respect to that which is called genus, either the same, or different in species. For matter is rendered manifest by negation; and genus is the matter of that of which it is said to be the genus; not, however, as the genus of the Heraclidæ, but as that which subsists in nature. Nor is genus denominated from things which are not in the same genus, but which differ in genus from them. But things differing in species differ from those in the same genus. For it is necessary that contrariety should be the difference of that from which it differs in species. But contrariety alone subsists in things which are in the same genus.

C H A P. IX.

SOME one, however, may doubt why woman does not differ in species from man, since the male and female are contraries, and contrariety is difference. But neither are male and female animals different in species, though these are the essential differences of animal, and are not as whiteness or blackness, but are inherent in animal so far as it is animal. The following doubt likewise is nearly the same with this, viz. Why, with respect to contrariety, one kind makes

makes things different in species, and another does not : as, for instance, why it makes that which is capable of walking and that which is winged, but does not make whiteness and blackness. Shall we say it is because some things are the proper passions of genus, but others are not? And since one thing is reason or form, but another matter, such contrarieties as are in form produce difference in species; but such as are in that which is assumed together with matter do not produce specific difference. Hence, neither whiteness nor blackness makes man *, because these are not the specific differences of a white and black man, though one name should be assigned to both. For man is as matter; but matter does not produce difference: for man is not man from the matter, but from the form of man. Hence, though the flesh and bones from which this and that man consist are different, yet the entire whole is different indeed, but is not different in species, because there is no contrariety in reason or form. But this entire whole is an individual; and Callias is form in conjunction with matter. This is likewise the case with a white man, because Callias is white. Man, therefore, is white according to accident. Nor do a brazen and wooden circle, nor a brazen triangle and wooden circle, differ in species through matter, but because there is contrariety in the form †. But whether shall we say, that matter does not make things different in species, though in a certain respect it is itself different, or that it partly does? For, why is this horse different in species from this man, since the forms of these subsist together with matter? Shall we say it is because contrariety is inherent in form? for there is a specific difference between a white man and a black horse, but not so far as the one is white and the other black; since, even if both were white, they would in a similar manner be specifically different. But the masculine and the feminine are the proper passions of animal, yet not according to essence, but in matter and body. Hence the same seed, in consequence of suffering a certain passion, becomes either female or male. And thus we have shown what it is to be different in species, and why some things are specifically different, and others are not.

* Instead of *ανθρωπον*, as in the printed text, the sense requires we should read *ανθρωπος*.

† Viz. Because the form of the circle is contrary to that of the triangle.

CHAP.

C H A P. X.

BUT since contraries are different in species, and the corruptible and the incorruptible are contraries (for privation is definite impotency), hence the corruptible and incorruptible must necessarily be generically different from each other. We have now, therefore, already spoken concerning these universal appellations. In consequence of this, it may seem not to be necessary that the corruptible and incorruptible should be different in species, as neither are white and black. For it would happen that the same thing would be both corruptible and incorruptible*, if any thing of universals subsists, just as man will be black and white; and after the same manner as it happens in particulars, that one and the same man is white and black successively, and not at once; though white is contrary to black. But, of contraries, some are inherent in certain things according to accident, such, for instance, as the particulars which have been just now mentioned, and many others; but in other things this is impossible, among which are the corruptible and incorruptible. For nothing is corruptible according to accident. For accident may happen not to be; but the corruptible is of things which necessarily subsist in the particulars in which it is inherent. Or the corruptible and incorruptible will be one and the same, if it is possible that the corruptible may not subsist. It is necessary, therefore, that the corruptible must subsist in each of the things which are corruptible, either essentially or in the essence of each. The same reasoning also applies to that which is incorruptible: for both are of things which have a necessary subsistence. So far, therefore, as one is primarily corruptible and the other primarily incorruptible, so far they are opposed to each other; so that they are necessarily generically different. Hence it is evident that there cannot be such forms as some assert there are. For, with respect to man, one will be corruptible and another incorruptible, though forms are said to be the same in species with particulars†, and

* See the Note to page 47.

† Neither Plato, nor any of his genuine disciples, considered ideas as the same in species with sensible particulars. For, according to them, ideas are eternal and perfectly incorporeal natures.

and not with respect to them equivocal. But things generically different are more distant from each other than such as are specifically different.

ures. Aristotle, therefore, cannot be serious in what he now says; or, if he is, his reasoning must be supposed to be directed against certain Platonists and Pythagoreans of his own time, who corrupted the genuine doctrine of ideas.

ARISTOTLE'S

ARISTOTLE'S METAPHYSICS.

B O O K XI.*

CHAP. I.

THAT WISDOM, therefore, is a certain science concerning principles, is evident from the first books, in which we doubted against the assertions of others respecting principles. But some one may doubt whether it is requisite to consider wisdom as one science, or as many sciences. For, if it is one science, there is always one science of contraries. But principles are not contraries. And if there is not one, of what kind are these many sciences? Further still: is it the province of one, or of many sciences, to contemplate demonstrative principles? For, if of one, why is it the province of this more than of any other? And if of many, of what kind are these many? Again: whether is there one science of all essences, or not? For, if not of all, it will be difficult to show what kind of essences those are of which there is one science. But if there is one science of all, it is immanifest how it happens that there is the same science of many essences. And further still: whether is demonstration conversant with essences alone, or also with accidents? For,

* In this book Aristotle repeats what he has before demonstrated, and suggests to us, that a doctrine of this kind is different from the physical and mathematical sciences, and alone deserves to be called wisdom. And, as in the third book he enumerated the doubts which pertain to the metaphysical science, he pursues the questions there proposed, in the other books, as far as to this eleventh book. See the Notes to the third book.

if with accidents, it is not conversant with essences. But if there is one science of essences and another of accidents, what is the characteristic of each, and which of the two is wisdom? For demonstrative wisdom is conversant with accidents; but the wisdom which considers first principles is conversant with essences. But neither must the science which we investigate be established about the causes which we have mentioned in our Physics; nor about that cause for the sake of which other things subsist. For a thing of this kind is *the good*; but this subsists in practical things, and in things which are in motion. And this first moves: for the end is a thing of this kind. But in things immovable there is not that which first moves. And, in short, it is dubious whether the science which is now investigated is conversant with sensible essences, or not with these, but with certain others. For, if with certain others, it will either be conversant with forms or mathematical species. But that forms are not is manifest. And at the same time, though any one should admit that they do subsist, it will be dubious why the like does not take place in other things of which there are forms, as in mathematical entities. But I say, that they place mathematical entities between forms and sensibles, as certain third natures, besides forms, and things which are here. However, there is not a third man, nor a third horse, besides man itself and horse itself and particulars. But if they are not as they say, about what kind of things must the mathematician be considered as conversant? For it cannot be with things which are here; since none of these are such as the mathematical sciences investigate; nor, indeed, is the science which we now investigate conversant with mathematical entities. For none of these has a separate subsistence. Nor yet is it conversant with sensible essences; for these are corruptible. And, in short, it is dubious to what kind of science it belongs to doubt concerning the matter of mathematical entities. For neither can it be the physical science, because the whole employment of physics is about those things which contain in themselves the principle of motion and rest. Nor yet that which is conversant with demonstration and science; for it makes this very genus itself the object of its investigation. It remains, therefore, that the first philosophy must make these* the object of its speculation.

* In the printed text *περί αὐτῶν*, but the sense requires we should read *περί αὐτῆς*. For the proposed doubt is, what the science is which speculates the *matter* of mathematical entities.

Some

Some one, however, may doubt whether it is requisite to establish the science which we now investigate, as conversant with those principles which are called by some elements. But these are considered by all men as inherent in composite natures. However, it will rather appear that the science which we investigate, ought to be conversant with universals. For every reason and every science are employed about universals, and not about the last of things; so that thus this science will be conversant with first genera. But these will be *being* and *the one*. For these are especially considered as comprehending all beings, and as in the most eminent degree assimilated to principles, because they rank as things first by nature. For, these being corrupted, other things also are at the same time destroyed: for every thing is *being* and *one*. But so far as it is necessary that differences should participate of these, if any one admits the subsistence of these genera, since no difference participates of genus, so far it will not appear necessary to establish these either as genera or principles. Further still: if that which is more simple is more a principle than that which is less simple; but the last of things* which proceed from genus are more simple than genera; for they are indivisibles; but genera are divided into many species and differences;—hence species will appear to be more principles than genera. But so far as species are taken away together with genera, genera will appear to be more similar to principles. For that is a principle which takes away other things together with itself. These, therefore, and other such-like particulars, are the things which are dubious.

CHAP. II.

FURTHER still: it may be doubted whether it is necessary that something besides particulars should be admitted or not, since the science which we now investigate is conversant with these. These, however, are infinite: and things which have a subsistence besides particulars, are either genera or species. But the science which is at present investigated is not the science of either of these. And why this is impossible we have already shown. For, in short, it is dubious, whether a certain essence separate from sensible essences, and things which are here, ought to be admitted or not. Or shall we say that

* By the last of things which proceed from genus Aristotle means the most special species, under which there is no other species; such, for instance, as man.

sensibles are beings, and that wisdom is conversant with these? We appear, however, to investigate a different essence; and this essence is the object of our present investigation. I say, it seems that we inquire, if there is any thing essentially separate, and which does not subsist in any sensible nature.

Again: if there is another certain essence besides sensible essences, what kind of sensibles are they, besides which it is requisite to establish this essence? For, why should any one admit that it subsists besides men, rather than besides horses, or other animals, or, in short, than things inanimate? But, indeed, he who devises other eternal natures equal to sensible and corruptible essences would appear to fall beyond the boundaries of reason. However, if the principle which is now investigated is not separate from bodies, what else can any one admit rather than matter? But this has not a subsistence in energy, but in capacity. Species, therefore, and forms will appear rather than this to be the most proper and powerful principle. But this also is corruptible: so that, in short, there is not an eternal essence separate, and subsisting by itself. This, however, is absurd: for it appears that there is such an essence; and *a certain principle and essence of this kind is investigated by men of the most elegant minds*. For, how will there be order, if nothing eternal, separate, and permanent subsists? Again: if there is a certain essence and principle, naturally such, as we are now investigating, and this is one principle of all things, and the same is the principle of things eternal and corruptible*, it is dubious why, since there is the same principle, some things under this principle are eternal, and others are not eternal. For this is absurd: but if there is one principle of things corruptible, and another of things eternal, if the principle of things corruptible is also eternal, a similar doubt will arise. For why, since the principle is eternal, are not the things which subsist under this principle eternal? But, this principle being corruptible, there will be some other principle of this principle, and again another of this, and this will be the case *ad infinitum*. If, again, any one admits the subsistence of *being* and *the one*, which especially appear to be immovable principles, in the first place, unless each of them signifies this particular definite thing and essence, how will they be separate, and have an essential subsistence? But we investigate such-like eternal and first principles; and if each of them signifies this particular thing and essence, all things will be essences: for *being* is predicated of all things, and of some things *the one*. But that all things are essences is false.

* See the Notes to the third book.

Again:

Again: how can that which is asserted by some be true, viz. that the first principle is *the one*, and that this is *essence*, and that from *the one* and *matter* the first number is generated, which is essence? For, in what manner is it requisite to understand as one, the duad, and each of the other composite numbers? For they neither say any thing, nor indeed is it easy to speak concerning this. But if any one establishes lines as first principles, or the things consequent to these (I mean superficies), these are not separate essences, but are sections and divisions, the former of superficies, and the latter of bodies; but points are sections and divisions of lines: and besides this, they are the boundaries of these very same things. But all these have a subsistence in others, and no one of them is separate. Further still: in what manner ought we to conceive the essence of *the one*, and of a point? For, of every essence there is a generation, but there is not of a point. For a point is division. This also is an occasion of doubt, that every science is of things universal, and of that which is of this kind; but essence is not of universals, but is rather this particular definite thing, and has a separate subsistence. So that if science is conversant with principles, in what manner ought we to conceive that essence is the principle of things?

Again: whether is there any thing besides the whole, or not? But I mean matter, and that which subsists together with this*. For, if there is not, every thing in matter is corruptible. But if there is any thing besides, it will be species and form. It is difficult, therefore, to determine in what things this subsists, and in what it does not. For, in some things it is evident that there is not a separate form, as, for instance, in a house. Likewise, whether are principles the same in species, or in number? For, if they are one in number, all things will be the same.

C H A P. III.

SINCE, however, the science of the philosopher is conversant with being so far as being, and this universally, and not according to a part, but being is predicated multifariously, and not according to one mode;—this being the case, if being is predicated equivocally, and not according to any thing common, it is not under one science. For there is not one genus of things of this kind. But if it

* Viz. Form.

is predicated according to any thing common, it will be under one science. It seems, therefore, that it is predicated after the same manner as that which is medicinal, and that which is salubrious. For each of these is predicated multifariously. But each of them is predicated after this manner, because this is in a certain respect referred to the medicinal art, but that to health; and again something else is referred in a different respect, but each is referred to the same. For a medicinal discourse and a little knife are predicated; the former because it proceeds from the medicinal science, and the latter, because it is useful to this science. The salubrious, too, in a similar manner is partly so denominated because it is significant, and partly because it is effective of health. And there is the same mode with respect to the rest. After the same manner, likewise, all beings are predicated: for each of them is called being, because it is either a passion, or habit, or disposition, or motion, or something else of this kind, of being so far as being.

But as there is a reduction of every being to a certain one, and something common, so of contraries each is reduced to the first differences and contrarieties of being, whether *multitude* and *the one*, or *similitude* and *disimilitude* are the first differences of being, or certain other things: for let these be the subject of future speculation*. There is, however, no difference, whether the reduction of being is made to *being* or to *the one*. For, if they are not the same but different, yet they are converted: for *the one* is also in a certain respect *being*; and *being* is *the one*. But since it is the province of one and the same science to speculate all contraries, and each of these is predicated according to privation (though respecting some things of which there is a certain medium, as of the unjust and the just, it may be doubted how they are predicated according to privation), this being the case, about all these, it is requisite to place privation, not of the whole definition, but of the last species; as, if he is a just man who obeys the laws according to habit, he who is unjust† will not be altogether deprived of the definition of the just man. However, as he is in a certain respect deficient as to obedience to the laws, in this respect a privation of this definition will be inherent in him. And the like reasoning will take

* Alexander informs us, that this was considered by Aristotle in his treatise *Περὶ τῆς ἀγαθῆς*, or *Concerning the Good*; which, as we have before observed, is unfortunately lost.

† It is well observed by Alexander, that Aristotle by *unjust*, here, means one who is neither just nor unjust, but subsists between both.

place

place in other things. But, as the mathematician speculates from abstraction (for he contemplates by abstracting all sensible natures, as, for instance, gravity and levity, hardness and its contrary, and, besides these, heat and cold, and other sensible contrarieties), but alone leaves quantity and the continuous, of which some pertain to one, others to two, and others to three*, and the participated properties of these so far as they are quantities and continuous, and does not speculate them according to any thing else: and of some, indeed, he contemplates the natures and positions with reference to each other, and the things which are inherent in these, but of others the commensurations and incommensurations, and of others again the ratios, yet at the same time we establish one and the same geometrical science of all these,—the like also takes place with respect to being; since, to contemplate the accidents to this so far as it is being, and its contrarieties so far as it is being, is the business of no other science than philosophy. For some one may attribute to the physical science the speculation of these, not so far as they are beings, but rather so far as they participate of motion. But the dialectic and sophistic sciences are conversant indeed with the accidents of beings, but not so far as they are beings, nor do they speculate being so far as being. It remains, therefore, that the philosopher contemplates the things we have just mentioned, so far as they are beings. But since every being is predicated according to a certain one, and something common which is multifariously denominated, and after the same manner contraries (for they are referred to the first contrarieties and differences of being); and also, since it is possible that things of this kind may be under one science, hence the doubt which was mentioned in the beginning is solved: I mean the doubt, how there will be one science of many things which are generically different.

C H A P. IV.

BUT since the mathematician uses things common in an accommodated manner †, to speculate also the principles of these things will be the business

* By pertaining to one, two, and three, Aristotle means lines, superficieses, and solids; the first being of one, the second of two, and the last of three dimensions.

† See the Dissertation on the Demonstrative Syllogism prefixed to my translation of Proclus on Euclid.

of

of the first philosophy. For that, when equal things are taken away from things equal, the remainders are equal, is common to all quantities. But the mathematical science receiving this speculates about a certain part of its proper matter; as, for instance, about lines, or angles, or numbers, or something pertaining to other quantities; not, however, so far as they are beings, but so far as each of them is continuous in one, or two, or three dimensions. Philosophy, however, does not make particulars the objects of its speculation so far as something is accidental to each of these; but it contemplates every thing of this kind about being, so far as it is being. And after the same manner the first philosophy speculates about the physical science: for the physical science contemplates accidents, and the principles of beings, so far as they are in motion, and not so far as they are beings. But we have said, that the first science is employed about these, so far as the subjects of them are beings, and not so far as they are any thing else. Hence this* and the mathematical science must be considered as parts of wisdom.

C H A P. V.

THERE is, however, in beings a certain principle, about which we cannot speak falsely; but it is always necessary to do the contrary to this, I mean, to speak conformably to truth; as, for instance, that it is not possible for the same thing, at one and the same time, to be and not to be, and so of other things which are after this manner opposed. And concerning things of this kind, there is not indeed simply demonstration [but it is possible to confute him who affirms that contradiction can be at the same time true †]. For it is not possible to syllogise concerning it from any principle more worthy of belief than this ‡, which, however, would be necessary if it could simply be demonstrated. But to him who shows it is false, that opposite assertions are at the same time true, something of such a kind must be assumed, which, though it

* Viz The physical science.

† Of the words within the brackets, there is nothing more in the original than *προς τοὺς δ' ἐστιν*.

‡ It is well observed here by Alexander, that since all demonstration and every demonstrative syllogism consist from things prior and more known, but nothing is more known than contradiction, there can be no syllogism and demonstration of it; since to effect this something more known and credible ought to be assumed.

will

will be the same with that which cannot be and not be the same at one and the same time, yet will not appear to be the same with it. For thus alone a demonstration can be effected against him who contends that opposite assertions may be verified respecting the same thing. In the next place it must be assumed, that those who are about to discourse together ought to understand each other; for, unless this is effected, how will there be a mutual communication of discourse? It is requisite, therefore, that each of the appellations should be known, and should manifest one thing alone, and not many things; because, if it signifies many things, it is evident that the sense in which it is used must be explained. He, therefore, who says that this thing both is and is not, asserts that this is not, which he says is; so that he asserts that the name does not signify that which it does signify. But this is impossible. Hence, if there is any meaning in asserting that this thing signifies this thing, it is impossible that contradiction concerning the same thing can be verified.

Again: if a name signifies any thing, and this is verified, it is requisite that this should be from necessity: but that which is from necessity cannot then not be. Opposite affirmations therefore and negations cannot be verified concerning the same thing. Further still: if affirmation is not more verified than negation, he who asserts that any one is a man, will not speak more truly than if he asserts that he is not a man. But it will appear that he who says man is not horse, speaks either more or not less truly than if he asserted that man is not man: so that he will speak truly in asserting that the same is a horse; because, according to this doctrine, opposite assertions are similarly true. It happens, therefore, that the same thing is man and horse, or some other animal. Hence, there is simply no demonstration of these things; but against him who makes these positions there is demonstration. Any one likewise may easily compel Heraclitus himself, if interrogated after this manner, to confess that opposite assertions cannot by any means be verified concerning the same thing: but now, not being conscious of what he said, he entertained this opinion. In short, if that which is asserted by him is true, neither will this be true, that it is possible for the same thing, at one and the same time, to be and not to be. For as when these assertions* are divided, affirmation is not more true than negation, after the same manner when they are conjoined and united, and affirmation

* Viz. Such assertions as Socrates is not a man, Socrates is a man.

is considered as one thing, negation will not be more true than the whole assumed in affirmation. Further still: if nothing can be truly affirmed, this also will be false, to say that no affirmation is true. But if any affirmation is true, the assertion of those who oppose things of this kind, and who entirely subvert discourse, will be dissolved.

CHAP. VI.

SIMILAR also to what has been said is the assertion of Protagoras. For he said that man is the measure of all things; signifying by this nothing else than that whatever appears to every one is firmly that which it appears. If this however be admitted, it will happen that the same thing will both be and not be, and will be good and evil, and whatever else is said according to opposite assertions; because frequently this thing appears to some to be beautiful, and to others the contrary: but that which appears to every one is a measure. This doubt, however, will be solved, by contemplating whence this opinion derived its origin. For to some, indeed, it appears to have originated from physiologists; but to others, from all men not possessing the same knowledge about the same things: but to some this thing appears pleasant, and to others the contrary. For that nothing is generated from non-entity, but every thing from being, is nearly the common dogma of all physiologists. Since, therefore, from that which is perfectly white*, and

* The sense of this passage, which Alexander justly calls very obscure and dark, is, according to that celebrated commentator, as follows:

"Some of those who admitted the doctrine of the physiologists, that nothing is generated from non-entity, falsely assumed from induction, that as man is generated from man, and horse from horse, so non-white is generated from non-white, and not from white: which proposition is indeed false: for though man is generated from man, yet he is proximately generated from the male seed, and female menses, which are not men. Assuming, therefore, this false proposition, that non-white is generated from non-white, and not from white, and also another false proposition, viz. that all negations signify non-entities from non-entities, they reasoned as follows: If non-white is generated, it is generated from non-white; but non-white is non-being, non white therefore is generated from non-being. But physiologists are unanimous in asserting that from non-being nothing is generated. Non-white, therefore, is not generated from non-white, or from non-being. Hence it is generated from being. But if non-white is non-being, white will doubtless be being; and hence, white, or, which is the same thing, being, will be that from which non-white is generated, since that which is generated ought to be generated from being. But again: so far as non-white, according to them, is produced from

and by no means not white, that which is not white is generated ; if now that which is not white is generated from that which is not white, according to their doctrine, it will be generated from non-entity ; unless that which is not white and that which is white were the same.

It is not however difficult to dissolve this doubt. For it has been said by us in our Physics, how things which are generated are generated from non-entity ; and how they are generated from being. And, indeed, to attend similarly to both the opinions and phantasies of those who oppose each other, is stupid : for it is evident that one of them must necessarily assert that which is false. This also is evident from the things which are effected according to sense : for the same thing never at any time appears to some to be sweet, and to others the contrary, when that organ which has the power of perceiving and judging the above-mentioned tastes is not corrupted and injured in the other of these. This being the case, some of these must be considered as a measure, and the others as not a measure. I also assert this in a similar manner of good and evil, of the beautiful and the base, and of other things of this kind. For to admit nothing but appearances does not in any respect differ from those who, by placing the finger under the eye, and causing two things to appear from one, should think that there are two, because there appears to be so many, and again, that there is one : for to those who do not move their sight, one thing appears to be one. In short, it is absurd, because things which are here appear to be changeable, and never abide in the same state, to form from this circumstance a judgment of truth : for it is requisite to investigate truth from things which always subsist according to the same, and never change. But of this kind are the natures which the world* contains. For these do not appear to be different at different times, but they are always the same, and participate of no mutation.

Again : if there is motion, and something which is moved, but every thing which is moved is moved from something, and into something, it is

from non-white, that from which non-white is produced will be non-white. And hence, that from which white is generated will be both white and not white. Aristotle, therefore, solving this question, says that it is true to assert that non-white is generated from non-being, yet not from non-being simply, but from that which is partly being and partly non-being ; about which he discourses in the first book of his Physics."

* Aristotle, says Alexander, calls the celestial sphere and the stars, *the world*.

necessary that a thing which is moved should still be in that from which it is moved, and yet should not be in it; and that it should be moved in this particular thing, and yet not be in it, or according to these men contradiction will not be verified. (And if things which are here continually flow, and are moved according to quantity, and this is admitted by some one, although it is not true, why are they not permanent according to quality? For these men appear in no small degree to predicate contradictions of the same thing, in consequence of conceiving that quantity is not permanent in bodies.) Hence, according to them, the same thing is and is not of four cubits. But essence is according to quality: for this is of a definite nature. But quantity partakes of the indefinite. Again: why, when the physician orders this particular food, do they take it? For why is this rather bread than not? So that it will be just the same thing to eat as not to eat. But now, because the physician asserts the truth respecting it, and this which they are ordered to take is food, they take it: they ought not, however, since no nature whatever among sensibles firmly abides, but all things are perpetually in motion, and perpetually flowing.

Further still: if we are perpetually changing, and never abide the same, is it wonderful, if things should never appear the same to us, in the same manner as it happens to the diseased? For to these, because their habit is not similarly disposed as when they are in health, things which present themselves to the senses do not appear in a similar manner; the sensible things themselves not partaking through this of any mutation, but producing different and not the same sensations in the diseased. It is therefore perhaps necessary that the same consequences should be produced in us, if the above-mentioned mutation takes place: but if we are not changed, but continue the same, there will be something permanent. Hence, it is not easy to confute the assertions of those who entertain these doubts from reasoning, when they do not admit something, and no longer require a reason to be given for these things: for after this manner all reasoning and demonstration subside: for, by admitting nothing, they, in short, subvert disputation and discourse; so that no reasoning can be addressed to men of this kind. But, from the above-mentioned doubts, it is easy to reply to those who are dubious, and to dissolve the particulars which occasion them to doubt, as is evident from what has been said: so that from these things it is manifest that opposite assertions cannot be verified at one and the same time about

about the same thing, nor yet contraries; because these are denominated according to privation. But this will be evident, by analysing the definitions of contraries to their principle. And in a similar manner, neither can any medium be predicated of one and the same thing: for, if the subject is something white, by saying that it is neither black nor white we shall speak falsely; for it happens that it is, and yet is not white: for the other of the extremes will be verified concerning it; but this is a contradiction of the white. Neither, therefore, shall we assert that which is true, by speaking either like Heraclitus, or Anaxagoras; for, otherwise, it would happen that contraries would be predicated of the same thing: for, when Anaxagoras says that a part of every thing is in every thing, he says that a thing is not more sweet than bitter, or any one of the other contraries; if all things subsist in all, not only in capacity, but in energy, and separate from each other. In like manner, neither is it possible that all assertions can be false, nor all true; as well on account of many other difficulties which attend this position, as because, all assertions being false, neither when any one asserts that they are all false, will he speak the truth: and all assertions being true, he who says all are false will not speak falsely.

C H A P. VII.

BUT every science investigates certain principles and causes about the respective objects of its knowledge; as, for instance, the medicinal and gymnastic, and each of the remaining effective or mathematical sciences. For each of these, circumscribing for itself a certain genus, is conversant with this as subsisting, and as being, yet not so far as it is being; but this is the province of another science, different from these sciences. But each of the above-mentioned sciences, receiving in a certain respect definition in each genus, endeavours to demonstrate what remains more negligently or more accurately: and they receive definition, some of them through sense, and others from hypothesis. Hence, from an induction of this kind, it is evident that there is no demonstration of essence and definition. Since, however, there is a certain science concerning nature, it is evident that it is different from the practical and effective sciences: for the principle of motion of the effective science is in that which makes, and not in that which is made; and this is either a certain art, or some other power. And

And in a similar manner in the practick science; motion is not in the thing which is done, but rather in the agents. But the physical science is conversant with things which contain in themselves the principle of motion. That the physical science, therefore, is neither practick nor effective, but is necessarily theoretic, is from these things evident: for it must necessarily fall into one of these genera.

Moreover, since it is necessary that each of the sciences should, in a certain respect, have a knowledge of definition, it is requisite not to be ignorant how the physical science is to be defined, and how the definition of essence is to be assumed; whether as the flat nose, or rather as the concave: for of these, in the definition of the flat nose, the matter of the thing is assumed; but the definition of the concave is without matter: for flatness is generated in the nose. Hence, the definition of it is contemplated together with this: for the flat nose is a hollow nose. It is evident, therefore, that the definition of flesh, of the eye, and of the other parts of the body, must always be assigned in conjunction with matter. But since there is a certain science of being so far as being, and so far as it is separate, we must consider whether it is to be admitted as the same with the physical science, or rather as different from it. The physical science, therefore, is conversant with those things which contain in themselves the principle of motion: but the mathematical science is speculative indeed, and about things which are permanent; but not separate from sensibles. There is therefore another science besides both these, which is conversant with separate and immoveable being, if an essence of this kind subsists: I say an essence separate and immoveable, the subsistence of which we shall endeavour to evince: and if there is an essence of this kind in beings, there also divinity will reside; and this will be the first and most powerful principle. It is evident, therefore, that there are three genera of contemplative sciences, the physical, the mathematical, and the theological. Hence, too, the genus of the contemplative sciences is the most excellent; and of these, that which was mentioned in the last place; for it is conversant with the most honorable of beings: for every science is called better or worse, according to the proper object of its knowledge. Some one, however, may doubt whether it is requisite to establish universally the science of being, so far as it is being, or not. For each of the mathematical sciences is employed about one certain definite genus; but the universal science speculates in common about all things. If, therefore, physical

fical essences are the first of beings, the physical science also will be the first of sciences : but if there is another nature and essence separate and immovable, it is also necessary that there should be another science of it, and that this should both be prior to the physical science, and universal because prior.

C H A P. VIII.

SINCE, however, being, simply considered, is predicated according to many modes, of which one is that which is said to subsist according to accident, let us in the first place speculate concerning being which thus subsists. That none of the sciences, therefore, which are delivered to us is conversant with accident is evident. For neither does the architectural art consider what will happen to those who are to use the house ; as, for instance, whether they will inhabit it painfully, or the contrary : nor is accident the object of attention to the weaving, shoe-making, and cooking arts ; but each of the sciences alone considers that which is essentially peculiar to itself ; and this is its proper end. Nor does it consider any one so far as he is a musician and grammarian ; nor assert that he who is a musician, if he should become a grammarian *, will at the same time be both, though he was not before. But that which is not always, was generated ; so that at the same time he becomes a musician and grammarian. This, however, none of those which are acknowledged to be sciences investigates, except the sophistic science : for this alone is conversant with accident. Hence, Plato does not speak badly when he says † that the sophistic art is employed about non-entity.

* The assertion of the ancient sophists, to which Aristotle alludes in this place, is, according to Alexander, as follows : " They suppose a man, as for instance Callias, perfectly ignorant of grammar, to have been first a musician, and that he afterwards became a grammarian ; and then they thus reason. Callias is now at the same time both a musician and a grammarian. If this therefore be true, when he was made a grammarian, he was also made a musician : for, since he is now at the same time both a grammarian and musician, he is at the same time made a grammarian and a musician. Hence, when he is made a grammarian, he was not a musician †. According, however, to the hypothesis, he was a musician before he was made a grammarian. Before, therefore, he began to be a grammarian, he both was and was not a musician. The paralogism, however, is in the assertion, which is doubtless false, that the generation of things which exist together is also effected at the same time."

† In the Sophists.

‡ Because according to the sophism he is made both at the same time.

But,

But, that it is not possible there can be a science of accident will be evident, if we endeavour to perceive what accident is. With respect to all things, therefore, some things are always, and from necessity; (I do not mean a necessity which is denominated according to violence, but that which we use in demonstrations) but others subsist as for the most part; and others neither subsist as for the most part, nor always, and from necessity, but *as it happens*. Thus, cold may be produced under the dog-star; but this will neither be produced as always from necessity, nor as for the most part. And thus we have shown what accident* is.

But why there is not science of a thing of this kind is evident: for every science is of that which always is, or which is for the most part; but accident does not rank among either of these. It is also evident that there are not such like causes and principles of being according to accident, as there are of that which is essentially being; for, if this were the case, all things would be from necessity: for, if this thing is in consequence of that, and that in consequence of this, and this thing is not contingent, but from necessity, that also will be from necessity of which this was the cause, as far as to that which is called the last† effect: but this was according to accident. Hence, all

* As the word used here by Aristotle is *συμβεβηκός*, we may again see how egregiously Dr. Gillies is mistaken, in asserting that this word in Aristotle never signifies *accident*.

† The comment of Alexander on this part is as follows: "As, if there is a house, there are necessarily walls, and if these, a foundation; in like manner, accident will have a necessary subsistence, if its causes are definite. But this will be more evident from the following example: When the sun is perpendicularly opposed to the moon, an eclipse is necessarily produced. But let it be admitted to have happened, that a treasure was found in an eclipse. If, therefore, the causes of finding the treasure are definite, let the causes of it be the eclipse, and the cause of the eclipse. Then we may thus reason: When the sun perpendicularly opposes itself to the moon, an eclipse is necessarily produced. But an eclipse is the cause of finding a treasure: the treasure therefore is necessarily found. The discovery, however, of a treasure is an accident, for it is among the number of things which rarely happen. But now, because its causes are said to be definite, it is concluded that it is among the number of things necessary. All things, therefore, are necessary, and nothing is contingent. But Aristotle calls the last form or species the last effect: for the first cause is the perpendicular distance of the sun; but the effect is the eclipse itself. Again: the second cause is the eclipse; but the last effect is the discovery of a treasure, which, if it were the cause of any thing, that would be the last effect. If we, therefore, admit that there is a cause of accident, it follows that accident has a necessary subsistence; but, if we deny that this cause *is*, and admit that it is *generated*, accident will *necessarily* be effected: for, if to-morrow a treasure will be discovered, if there is an eclipse, but there will be an eclipse if there is an opposition under the earth, and this will take place if the sun becomes perpendicular,

all things will be from necessity; and to subsist casually after this or that manner, to be contingent, and to be generated, and not to be generated, will be taken away from generated natures. And although cause is supposed not to be being, but that which subsists in generation, or becoming to be, the same things will happen. For every thing will be generated from necessity. For to-morrow there will be an eclipse, if this particular thing takes place; but this will be effected if something else takes place, and this last if something else. And after this manner, if time is taken away from that definite time which is from the present instant till to-morrow, we shall at length arrive at that which exists. So that, since this is the case, all things after this will be generated from necessity; so that all things will be generated from necessity.

But, with respect to that which is truly being, and which does not subsist according to accident, one kind is that which subsists in the comprehension of the dianoëtic power, and is a passion in this; and hence, causes are not investigated about that which is after this manner being, but about that which is being external to this, and has a separate subsistence. That, however, which subsists according to accident is not necessary, but indefinite. But of a thing of this kind the causes are inordinate and infinite; but that which subsists for the sake of something ranks among things generated by nature, or proceeds from the dianoëtic power*. And fortune then subsists when some one of these is produced according to accident: for, as with respect to

perpendicular; and this again if it should rain, and this if it should thunder; so that thunder is the last: then, by a retrograde process, because it thunders, it will necessarily rain. If it rains, the sun will be necessarily perpendicular. If this takes place, there will necessarily be an opposition; and if this, the moon will be eclipsed; and if the moon is eclipsed, a treasure will necessarily be discovered. All, therefore, will be from necessity. Hence, says Aristotle, if, beginning from this point of time, we should say, To-morrow the moon will be eclipsed, since every thing which is generated is generated in a finite time, we shall arrive at that which exists. For, let it be supposed that the treasure is discovered at the same time that the eclipse ceases; that after this rain immediately follows; and after the rain thunder; then, since every time is finite, if you take away the time of the eclipse, and afterwards that of the rain, though it should be a hundred or a thousand months, you will arrive at that which exists, viz. at the thunder. Beginning, therefore, from thence, we shall assert that every thing after the thunder was from necessity."

* The Commentary of Alexander on this book ends at the word *power*. For, as what follows is extracted from the *Physics*, he refers the reader to his comment on that work for an explanation of the rest of this book. The reader will find all that follows in the second, third, and fifth books of the *Physics*.

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being,

being, one kind is essential, and another according to accident, so also with respect to cause. But fortune* is a cause from accident in things which are produced according to free-will for the sake of something. Hence, fortune and the dianoëtic power are conversant with the same thing: for free-will is not without the dianoëtic power. But the causes are indefinite by which the

* Aristotle alone considers Fortune as a cause with which all men are acquainted, viz. as a cause which obtains an end different from that which was proposed; but he leaves the speculation of fortune considered as an occult and divine cause to theologists. However, the following account of Fortune, as a certain divine power rooted in the ineffable principle of things, will, I doubt not, be gratefully received by the philosophic reader. It is extracted from that admirable work the Commentaries of Simplicius on Aristotle's Physics, lib. ii. p. 81. “*Ἡ τῆς τύχης ἐπι- κρατεῖα τὴν ὑποσέλην μαλίστα τοῦ παντός μοῖραν διακοσμεῖ, παρ’ ἣ καὶ ἡ τοῦ εἰδεχομένου φύσις, ἣν ἀτακτοῦσαν καθ’ εαυτήν, ἡ τύχη μετὰ τῶν ἀλλῶν ἀρχηγικῶν αἰτιῶν κατευθύνει, καὶ τάττει, καὶ κυβερνᾷ. διὸ καὶ πῆδα- λιον αὐτῇ διδοῦσι κρατεῖν, ὡς κυβερνήσῃ τὰ ἐν τῇ ποτῇ τῆς γενέσεως πλεοντα. καὶ τὸ πῆδαλιον ἐπὶ σφαιρᾷ ἰδρύουσιν, ὡς-τι ἀστατόν τῆς γενέσεως κατευθυνούσης. κέρας δὲ ἀμαλθείας ἐν τῇ ἑτέρᾳ τῶν χειρῶν καρπῶν πλήρες, ὡς τοῦ τυχεῖν πάντων θείων καρπῶν αἰτία. διὰ τοῦτο δὲ, καὶ πόλεων καὶ οἰκῶν, καὶ ἐνὸς ἐκαστοῦ τιμῶμεν τύχας, ὅτι πορρῶ διαστάντες τῆς θείας ἐνώσεως, κινδυνεύομεν διαμαρτεῖν τῆς ἐπιβαλλούσης μεθιξέως. καὶ δεόμεθα πρὸς τὸ τυχεῖν τῆς τε θεοῦ τύχης, καὶ τῶν ἐν τοῖς κρείττοσι γενέσθαι τὴν αὐτὴν ἐχούσων ιδιότητα. καὶ ἐστὶ μὲν πᾶσα τύχη ἀγαθὴ. καὶ γὰρ ἡ πᾶσα τεύξις ἀγαθοῦ τινος ἐστίν, οὐδὲ ὑπερστὴ τι κακὸν ὑπὸ τοῦ θεοῦ. τῶν δὲ ἀγαθῶν, τὰ μὲν ἐστὶ προηγούμενα, τὰ δὲ κολαστικά ἢ τιμωρὰ, ὥστε καὶ κακὰ λεγέιν ἐθισμένα. καὶ διὰ τοῦτο καὶ τύχην, τὴν μὲν ἀγαθὴν οὐκ ἐμαζόμεν, ἢ τίς τοῦ τυχεῖν τῶν προηγούμενων ἀγαθῶν αἰτία ἐστὶ, τὴν δὲ κακὴν, ἢ τίς κολάσεως ἢ τιμωρίας ἡμᾶς παρασκευάζει τυχεῖν.—That is, “The power of fortune particularly disposes in an orderly manner the sublunary part of the universe, in which the nature of that which is contingent is contained, and which being essentially disordered, Fortune, in conjunction with other primary causes, directs, places in order, and governs. Hence she is represented guiding a rudder, because she governs things sailing on the sea of generation. Her rudder, too, is fixed on a globe, because she directs that which is unstable in generation. In her other hand she holds the horn of Amalthea, which is full of fruits, because she is the cause of obtaining all divine fruits. And on this account we venerate the fortunes of cities and houses, and of each individual; because, being very remote from divine union, we are in danger of being deprived of its participation, and require, in order to obtain it, the assistance of the goddess Fortune, and of those natures superior to the human, who possess the characteristic of this divinity. Indeed, every fortune is good; for every attainment respects something good; nor does any thing evil subsist from divinity. But of things good, some are precedaneous, and others are of a punishing or revenging characteristic, which we are accustomed to call evils. Hence we speak of two fortunes, one of which we denominate good, and which is the cause of our obtaining precedaneous goods, and the other evil, which prepares us to receive punishment or vengeance.” Thus far the admirable Simplicius.*

Fortune, therefore, considered as a divinity, is that power which disposes things differing from each other, and happening contrary to expectation, to beneficent purposes. Or it may be defined that deific distribution which causes every thing to fill up the lot assigned to it by the condition of its being,

things

things proceeding from fortune are produced. Hence, fortune is a thing immanifest to human reasoning, and a cause according to accident; but, simply, it is not the cause of any thing. Fortune, likewise, is good or evil, when any thing good or evil happens; but prosperous* and adverse fortune subsist about the magnitude of these. But, since nothing which subsists according to accident is prior to things which have an essential subsistence, neither are accidental prior to essential causes. If, therefore, fortune, or that which is casual, is the cause of the universe, intellect and nature will be a prior cause.

CHAP. IX.

OF things, some are in energy only, others in capacity, and others both in energy and capacity. And of these, one is substance, another quantity, and another some one of the rest†. But there is not any motion besides things themselves‡: for that which is changed is always changed according to the categories of being. But in these there is nothing common in any predication. But every thing subsists in a twofold relation in all things. Thus, with respect to this particular thing, this is the form of it, and that its privation: and, according to quality, this is white and that black. Thus, too, according to quantity, this is perfect and that imperfect; and according to lation, this is upwards and that downwards, or this is light and that heavy. So that there are as many species of motion and mutation as there are of being. But since in every genus there is a division into capacity and energy, I call motion § the energy of

* For *ατυχία*, as in the printed text, in this place I read *ετυχία*.

† *i. e.* Of the other categories.

‡ Since motion, according to Aristotle, is conversant with action and passion, he very properly says, that there is not any motion besides things themselves, *i. e.* besides the genera of being.

§ Simplicius, in commenting on this definition of motion, which Aristotle repeats from the third book of his *Physics*, observes as follows: "That Aristotle has wonderfully defined motion we may learn from hence. That which is in energy, as long as it continues so, is not, according to this, said to be moved. Thus man, as long as he is man, is not moved according to the human form: but neither if he were white in energy, as long as he continued white, would he be moved according to whiteness. But if man being white in energy was black in capacity, as having the power of becoming black, when his departure commences from whiteness into blackness so far as he is naturally adapted, that is, to him energizing according to his power of becoming black, then he is said to be moved to blackness. And again, when he is said to be black, then blackness is permanent in him, and he is no longer moved according to blackness, but he is

of that which is in capacity, so far as it is in capacity. And that our assertion is true, is evident from hence: for, when there is that which may be built so far as it is a thing of this kind, we say that it is itself in energy so far as it is built; and this is building. In a similar manner with respect to matheſis, healing, rolling, walking, leaping, growing old, and becoming thick. But a thing happens to be moved when there is *entelecheia* itself, and when it is neither prior nor posterior to this. But the *entelecheia* * of that which is in capacity, when being in *entelecheia* it energises, not so far as it is that which it is, but so far as it is moveable, is motion. My meaning is this: Brads is the statue in capacity; but at the same time the *entelecheia* of the brads, so far as

black in energy. Nothing, therefore, is moved so far as it is in energy. Nor yet so far as it is in capacity, abiding in capacity and in aptitude alone, can it be said to be moved; but when it changes from a subsistence in capacity to a subsistence in energy, a subsistence in capacity still remaining in it, then it is said to be moved. Aristotle, therefore, very properly adds, "so far as it is in capacity," that the energy of that which abides in capacity may be gradually perfected. For, capacity ceasing, motion is no more. And when it is in energy, so far as it is in energy it is in rest and permanency, but not in motion. Nor yet, if it is in capacity alone, will it be now moved. For that which is capable of being built, so long as it continues unenergetic according to the capacity of being built, is immovable. But when, so far as it is capable of being built, it has energised according to this, still possessing in the energising the capacity of being built, then it is moved, that is, when it is built; and building, being the energy of that which is then capable of being built, is motion."

Οτι δε θαυμασιως ωρισάτο την κίνησιν, μαθοίμεν αν εντεύθεν. το μεν γαρ ενεργεία ὅν ὅπερ λεγεται ἕως αν οὕτως εχει, ουκ αν λεγοιτο κατὰ τουτο κινεῖσθαι· ὅιον ὁ ἀνθρώπος ἕως αν ἀνθρώπος η, ουκ αν κινειτο κατὰ τὴν ἀνθρωπείαν. ἀλλ' οὐδε ει λευκος ειη ενεργεία, ἕως αν λευκος η, κινεῖται κατὰ λευκότητά. εαν δε λευκος αν ἀνθρώπος, ενεργεία δύναμει μελὰς η ὡς δυναμενος μελαινέσθαι, ὅταν ἐκταῖς αὐτῷ ἀπὸ λευκότητος γένηται ἐπὶ μελαινίαν, καθὼ ἐπεφυκει τούτῳ κατὰ τὸ δύναμενον γενέσθαι μελὰν, ενεργουντι, τότε λεγεται κινεῖσθαι ἐπὶ τὸ μελὰν. καὶ πάλιν ὅταν λεγεται μελὰς, τότε ἱσται εν αὐτῇ, καὶ ουκετι κινεῖται κατὰ τὸ μελὰν, ἀλλ' ἐστὶν ενεργεία μελὰς. οὕτως ἀρα καθὼ-ενεργεία ἐστὶν, οὐδεν κινεῖται. ου μὲντοι οὐδε καθὼ δύναμει μενον δύναμει καὶ εν μόνῃ τῇ ἐπιτηδεύου- τῇτι, ουκ αν λεγοιτο κινεῖσθαι, ἀλλ' ὅταν ἀπὸ του δύναμει μεταβάλλῃ εἰς τὸ ενεργεία, μενοντος εν αὐτῇ του δύναμει, τότε λεγεται κινεῖσθαι. εἰκοτὼς-οὐν προσέθηκεν η τοιούτον, ἵνα ἡ ενεργεία του δύναμει μενοντος ἐπιτελεῖται. παυσάμενου γαρ του δύναμει, ουκετι ἐστὶ κίνησις. το γαρ ενεργεία γενομενον καθότου ενεργεία, εν εἴσει καὶ εν μόνῃ ἐστὶν, ἀλλ' ουκ εν κινήσει. ου μὲντοι οὐδε ει τι τῇ δύναμει ἐστὶ μόνον, τουτο πῶς κινεῖται. το γουν οἰκοδομητον ὅπερ ἐστὶ τὸ δύναμενον οἰκοδομηθῆναι, ἕως μεν ἀνενεργῆτον μεν κατὰ τὸ οἰκοδομητον, ἀκίνητον ἐστὶν. ὅταν δε καθὼ σινο- δομητον ἐστὶ κατὰ τουτο ενεργῇ, ἐστὶ εχον εν τῇ ενεργείᾳ τὸ οἰκοδομητον, τότε κινεῖται, τούτῳ ὅταν οἰκοδομηται. καὶ ἡ οἰκοδομησις ενεργεία οὕσα του οἰκοδομητου τότε κίνησις ἐστὶ.—Simplic. in Arist. Phys. p. 94.

In short, motion is the internal perfection of that which is moveable, so far as it is moveable; and that perfection is the form or energy which subsists in that of which it is the internal perfection.

* For the accurate meaning of *entelecheia*, see Note to page 206.

brads,

brass, is not motion. For the essence of brass is not the same as the essence of a certain capacity; since, if it were simply the same according to definition, the *entelecheia* of the brass would be a certain motion. But it is not the same as is evident in contraries: for the capacity of becoming well, and the capacity of becoming ill, are not the same; for, if this were the case, to be well would be the same as to be ill. But the subject which is capable of being made well and ill, whether it be moisture, or whether it be blood, is one and the same. Since, therefore, the essence of a thing is not the same with the essence of a certain capacity, as neither is colour the same with that which is visible, motion is the *entelecheia* of that which is capable so far as it is capable. For that motion is, and that a thing happens to be moved, when it is itself *entelecheia*, and neither prior nor posterior to this, is evident. For it happens that every thing at one time energises, and at another time does not, as in that which is capable of being built, so far as it is capable of being built; and the energy of that which may be built, so far as it possesses this capacity, is building: for * the energy of it is either building or the house. But when the house is the energy, it will no longer be capable of being built; and that which is capable of being built is built. Building, therefore, is necessarily an energy, and building is also a certain motion. There is likewise the same reasoning respecting other motions.

But the propriety of what we have now said is evident from the assertions of others concerning motion, and from its not being easy to define it in a different manner. For, neither can it be placed in any other genus. And this is evident from their assertions: for some of these say, that it is diversity and inequality, and non-being, none of which is necessarily moved. But, neither is mutation a change into these, nor from things of this kind rather than from their contraries. The reason, however, why they placed motion in these, is because motion appears to be something indefinite. But the principles of the other co-ordination, in consequence of being privative, are indefinite. For no one of them is either this particular thing †, or a thing with a certain quality, or any one of the other predicaments. And motion appearing to be something indefinite, is the cause that it can neither be placed in

* Instead of *ἡ γὰρ τούτο ἐστὶν ἡ οἰκοδομησις, ἡ ἐνεργεία, ἡ οἰκία*, as in the printed text, I read *ἡ γὰρ τούτου ἐστὶν ἡ οἰκοδομησις ἡ ἐνεργεία, ἡ οἰκία*.

† By this particular thing, and a thing with a certain quality, Aristotle means the two predicaments substance and quality.

the

the capacity nor in the energy of beings: for neither that which is capable of being quantity is moved from necessity, nor that which is quantity in energy. Motion, however, appears to be a certain energy, though this energy is imperfect. But the cause of this is, that the capable of which it is the energy is imperfect; and on this account it is difficult to comprehend what it is. For it is either necessary to place it in privation, or in capacity, or in simple energy. But it does not appear that it can be any one of these. It remains, therefore, that it must be what we have said, viz. both energy, and yet not simply energy; which is indeed a thing difficult to perceive, but yet is capable of subsisting. That motion also is in that which is moved is evident: for the *entelecheia* of this is from that which is motive; and the energy of that which is motive is no other than this. For it is necessary that there should be *entelecheia* in both: for that which is motive is motive from possessing the capacity of moving; and that which moves moves from energising: but it is energetic of that which is in motion. So that, in a similar manner, there is one energy of both, just as there is the same interval of one to two*, and of two to one, and of ascent and descent, but the essence is not one. And the like takes place in the mover and the thing moved.

CH A P. X.

INFINITE is either that which it is impossible to pass over, because it is not naturally adapted to be permeated, in the same manner as voice † is invisible; or it is that which has a boundless passage, or that which scarcely ‡, or which is naturally adapted to have, but has not, a passage § or an end. Again: it either subsists from addition, or ablation, or from both. And, indeed, that infinite should be something separate and sensible is impossible. For, if it is

* In the same manner as the interval of one to two, and of two to one, and of ascent and descent, is one in subject but two according to ratio, that of one to two being half, but that of two to one double; so the motion of that which moves and that which is moved is one in subject; but when it is beheld as proceeding from that which moves, it is not the same as when beheld in that which is moved.

† Voice is invisible according to negation, because it is not naturally adapted to be seen, from not possessing colour.

‡ As a labyrinth.

§ As a way where there is intense heat or cold.

neither

neither magnitude nor multitude, but the infinite is the essence of it and not an accident, it will be indivisible. For that which is divisible is either magnitude or multitude. But if it is indivisible, it is not infinite, except in the same manner as voice is invisible. Neither, however, do they thus speak, nor do we thus investigate, but we consider it as impermeable. Further still: how is it possible how there can be the essentially infinite, if there is neither essential number nor magnitude, of which the infinite is a passion?

Again: if the infinite subsists according to accident, it will not be so far as infinite an element of things, as neither is the invisible an element of speech, though voice is invisible. And that the infinite is not in energy is evident: for any part whatever of it which is assumed will be infinite*; since the essence of the infinite and the infinite are the same, if the infinite is essence, and does not subsist in a subject. So that it is either indivisible or divisible into infinities, if divisible†. But it is impossible that the same thing can be many infinities: for, as a part of air is air, so infinite is a part of infinite, if it is essence and a principle. It is, therefore, impartible and indivisible. But it is impossible that a thing which is in *entelecheia* should be infinite; for it must necessarily be quantity. Hence it subsists according to accident. But thus subsisting, we have shown that it cannot be a principle, but this must be asserted of that to which it happens, viz. *number or the even*. This inquiry, therefore, is universal.

But that the infinite is not in sensibles is evident from hence: for, if the definition of body is, that which is bounded by superficies, there will not be an infinite body either sensible or intelligible. But neither will it be number as separate and infinite; for number, or that which possesses number, is

* If infinite is considered as a principle and as an essence infinite in energy, the infinite in it will be the same as the essence of the infinite, because its essence is infinite. It will, therefore, be simple, and, if simple, every way similar. But if this be the case, it will either be divisible, and thus by no means infinite, or, if divisible, it will be divided into infinities. For the essence of that which is simple is the same with its subsistence as this definite particular thing (*τὸδε τι*). Thus, soul is the same as the essence of soul; but in composites, that which subsists as this definite particular is a composite, but its essence is according to form. The parts of infinite, therefore, thus considered are infinite, in the same manner as a part of air is air, of water water, and, in short, just as the parts of essence are essences.

† Instead of *ἡ μέρη*, as in the printed text, the sense requires we should read *ἡ μέρη*. Bedarion also has *ἡ partibile est*.

numerable.

numerable. But, that the infinite is not in sensibles will be physically manifest from the following considerations: It can neither be any thing composite nor simple: for, if a composite, it will not be a body, if the elements are finite in multitude. For it is requisite that contraries should be equalised, and that one of them should not be infinite. For, if the power of the other body fails in any respect whatever, the finite will be corrupted by the infinite body. But that each of the elements should be infinite is impossible: for that is body which every way possesses interval; but that is infinite which has interval without end. So that, if there is an infinite body, it will be every way infinite. Nor yet is it possible that there can be one infinite simple body, nor, as some say, different from the elements, which according to them it generates. For there is not besides the elements a body of this kind; since all things are resolved into the natures from which they originate. But this does not appear to be, besides the simple bodies, either fire, or any other of the elements: for it is impossible, if it be admitted that the universe is finite, that the infinite can either be, or be generated from, some one of the elements, as Heraclitus said that all things were once fire. There is also the same reasoning respecting that one thing * which the natural philosophers introduce besides the elements. For every thing changes from a contrary, as, for instance, from the hot into the cold.

Again: a sensible body is in a certain place; and there is the same place of the whole and the part, as, for instance, of the whole earth and one clod†. So that, if the infinite is of similar parts, it will either be immoveable, or will always be impelled forward. But this is impossible: for, why should it be rather impelled downwards than upwards, or in any other direction? Thus, for instance, if it is a clod of earth, where will it be moved, or where will it abide? For the place naturally adapted to this body is infinite. It will, therefore, occupy the whole place. But after what manner? What, therefore, will be its rest, and what its motion? Shall we say that it will be every where at rest? It will not, therefore, be moved. Or shall we say that it is every where moved? It will not, therefore, abide. But if the universe is dissimilar, places also will be dissimilar, and in the first place the body of the

* Viz. Matter.

† The text here is defective; but I have supplied what is wanting from the third book of the Physics. It must be observed, that a clod of earth and the whole earth have the same place according to form, but not according to quantity, which place is the centre of the universe.

universe

universe will not be one, except by contact alone. In the next place, these things will either be finite or infinite in species. But that they should be finite is impossible. For some things will be infinite, and others not, if the universe is infinite; as, for instance, fire or water. But a thing of this kind is corruption to contraries. But if they are infinite and simple, places also will be infinite, and the elements will be infinite. However, if this is impossible, and places are finite, the universe also is necessarily finite. In short, it is impossible that there can be an infinite body, and at the same time a place for bodies, if every sensible body has either gravity or levity: for it will either be impelled to the middle, or upwards. But it is impossible that either the whole or the half, or any part whatever, of the infinite should be passive to any thing. For, how will you make a division? Or how of the infinite can one part be upwards and another downwards, or this the extremity, and that the middle?

Further still: every sensible body is in place; and of place there are six species*: but it is impossible that these should subsist in an infinite body. And in short, if it is impossible that place can be infinite, it is also impossible that body can be infinite: for that which is in place is somewhere; but this signifies either upwards or downwards, or some one of the other differences of place: and each of these is a certain boundary. But the infinite is not the same in magnitude, motion, and time, as if it were one particular nature; but the posterior is denominated according to the prior. Thus, motion is denominated infinite, according to the magnitude upon which a thing is moved, or changed, or increased: but time is denominated according to motion.

C H A P. XI.

Of things which are changed, one thing is changed according to accident; as when we say that the musician walks; but another thing is simply said to be changed, because something belonging to it is changed; as, for instance, such things as are changed according to parts: for the body is healed, because the eye is healed. There is also something which is of itself first moved; and this is that which is moveable from itself. There is a like

* Viz. Upwards and downwards, before and behind, to the right hand and to the left hand.

distinction too in that which moves: for one thing moves according to accident; another thing according to a part; and another from itself, or essentially. There is also that which first moves; and there is something which is moved. There is besides the time in which, and from which, and with reference to which, a thing is moved: but the forms and passions, and place to which things in motion are moved, are immoveable; as, for instance, science and heat. Likewise not heat but calefaction is motion*. But mutation, which is not according to accident, is not in all things, but is in contraries, and media, and in contradiction: and the credibility of this is derived from induction. That also which is changed, is either changed from a subject into a subject, or from a non-subject into a non-subject, or from a subject into a non-†-subject, [or from a non-subject into a subject]. But I mean by a subject, that which is manifested by affirmation. So that there are necessarily three mutations: for that which is from a non-subject into a non-subject is not mutation. For it is not between contraries, nor between contradictories, because, in passing from a non-subject to a non-subject, there is not opposition. Mutation, therefore, from a non-subject‡ into a subject according to contradiction, is generation; and such a mutation when it is simple is a simple, but when partial a partial generation. But the mutation from a subject into a non-subject is corruption; which when it is simple is a simple, but when partial a partial corruption. If, therefore, non-being is predicated multifariously, and that which subsists according to composition or division cannot be moved, neither can that which subsists according to capacity; which is opposite to that which simply is; for non-white or non-good can be moved according to accident, since that which is not white may be a man; but this can by no means be the case with that which is not simply this: for it is impossible that non-being can be moved. But if this be the

* Viz. Heat, which is a passion, is not motion, but calefaction is motion because it is a mutation to heat. Hence that which is passively affected, i. e. that which becomes hot, is moved with an internal motion: but this is not the case with heat.

† *μη* is omitted here in the printed text, as also are the words within the brackets, which I have added from the version of Bessarion. So that there is wanting in the Greek *η εν μη υποκειμενον εις υποκειμενον*.

‡ That is, from that which is not in energy, but yet is in capacity. Aristotle very properly adds here, *according to contradiction*; for a mutation does not take place from non-white into sweet, except according to accident.

case,

case, it is impossible that generation can be motion*: for, if it were, non-being would be generated. For though it should be especially generated according to accident, yet at the same time it would be true to assert of that which is simply generated, that it is non-being. And in a similar manner with respect to being at rest. Such are the absurdities, therefore, which attend this hypothesis. And again: if every thing which is moved is in place, but non-being is not in place; for it would be somewhere;—hence, neither is corruption motion: for motion or rest is contrary to motion, but corruption to generation. But since every motion is a certain mutation, and there are three mutations as above enumerated, and since of these the mutations according to generation and corruption are not motions (but these subsist according to contradiction)—hence it necessarily follows, that mutation from a subject into a subject is alone motion. But subjects are either contraries or media: for privation is admitted to be a contrary, and is manifested by affirmation†; as, for instance, the naked, the toothless‡, and the black.

CHAP. XII.

If, therefore, the categories are divided by substance, quality, place, action and passion, relation and quantity, it is necessary that there should be three motions, viz. of quality, of quantity, and of place. But there is not any motion according to substance§, because nothing is contrary to substance.

* For generation is of that which is not in energy, and not of that which is; but that which is moved now is, since motion, as we have before shown, is a certain energy.

† Generation and corruption, says Simplicius, subsist according to the contradiction of that which is, and of that which is not; but motion is from a contrary into a contrary, to which it is necessary that permanent substance should be subjected, as that which is naturally adapted to receive separately contraries, or things intermediate, or a privation opposite to accident, as the being sick, or naked, &c. which, because they are inherent in permanent substances, are both affirmatively predicated, and after a manner reduced into form. But the privation of substance is truly that which is not.

‡ In the second chapter of the fifth book of the Physics, instead of *λευκόν* we find *λευκόν* the white.

§ Aristotle shows that there is not any motion according to substance, because all motions are from contraries into contraries. But nothing is contrary to substance. Hence, in substance, there is not a mutation from a contrary substance, but from privation; and again, a mutation is not produced from substance into substance, but into privation and corruption.

M m 2

Nor

Nor is there any motion of relation: for it is possible that, one of the relatives being changed, it may be truly said of the other that it is not at all changed; so that the motion of them is according to accident. Nor is there any motion of agent and patient, or of that which moves and that which is moved, because there is not motion of motion, nor generation of generation, nor, in short, mutation of mutation. For it happens that there is motion of motion in a twofold respect; viz. either as of a subject, as man is moved, because he changes from white into black; so that thus also motion is either made hot or cold, or is changed in place, or is increased. This, however, is impossible; for mutation is not any subject. Or, there is motion of motion, because some other subject is changed from mutation into another form. Thus, man is changed from disease into health. But neither is this possible except according to accident: for every motion is a mutation from one thing into another, and in a similar manner generation and corruption; except that mutations from opposites are in this or that manner; but this is not the case with motions. Man is, therefore, at the same time changed from health to sickness, and from this very mutation into another. But it is evident that, when he becomes sick, he will be changed into a certain disease: for it is possible to rest. It is likewise evident that he will not always be changed into whatever may casually take place; and that will be a mutation from a certain thing into something else. So that convalescence will be an opposite motion, but from accident; just as if he should be changed from reminiscence into oblivion, because that in which oblivion is inherent is sometimes changed into science, and sometimes into health.

Further still: there will be a progression *ad infinitum* if there is a mutation of mutation, and generation of generation. But it is necessary that there should be the former, if there is the latter. Thus, if simple generation is at any time generated, that also which is simply in generation, or becoming to be, will be generated, so that a thing which is simply in generation will not yet be: but there was something which was in generation, and that something was formerly generated, and this again was once in generation or becoming to be; so that what was then in generation was not yet. But since there is not any thing first in things infinite, there will not be that which is first generated; so that neither will that which is consequent be. Neither, therefore, will it be possible for any thing to be generated, nor to be moved, nor to be changed.

changed. Again: contrary motion, and rest, and generation and corruption are of the same thing. So that a thing which is generated, when it becomes that which is generated, will then be corrupted*. For it is not immediately corrupted as soon as it is becoming to be, nor posterior to this: for that must necessarily be which is corrupted. Further still: it is requisite that matter† should be subject to that which is in generation and mutation. What, therefore, will it be? As that, indeed, which is variable is either body or soul, so that which subsists in becoming to be is either motion or generation. And, again, what is that into which it is moved? For it is requisite that there should be motion and generation of this thing from this into this. After what manner, therefore? For the generation of discipline is not discipline; so that neither is there generation of generation.

But, since there is neither any motion of substance, nor of relation, nor of action and passion, it remains that there can be alone motion according to quality, and quantity, and place: for in each of these there is contrariety. But I do not mean by quality, that which is in substance (since difference also is quality); but I mean passive quality, by which a thing is said either to suffer, or to be impassive.

With respect to the immoveable, that which is wholly impossible to be moved is immoveable; and that which is scarcely moved in a long time, or which slowly begins to be moved; and that which is naturally adapted to be moved, but yet is not able when it is naturally adapted, and where, and as it is naturally adapted, which alone among things immoveable, I denominate that which rests. For rest is contrary to motion; so that it will be a privation of that which is capable of motion.

Again: things are said to subsist together according to place, which are in one first place; and those are said to subsist separately, which are in a different

* If there is generation of generation, since the generation of one thing is the corruption of another, generation when generated will be corrupted. It will not, however, be corrupted in the beginning of its generation, since it would not be generated any longer; nor yet posterior to its generation, because when generated it is corrupted. Hence it is necessary that when it is completely generated it should then perish.

† In the same manner as brass is the subject matter of the statue, and as the body or soul is the subject of alteration, so, likewise, matter must be subject to that which is in generation; and not only to that which is simply in generation, but also to a certain generation and motion, and, in short, to mutation. For, if there were no subject, neither would any thing be generated.

place.

place. But things are said to touch each other, the extremities of which subsist together. A medium is that into which a thing which is changed is naturally adapted to proceed, before it arrives at that into which it is ultimately changed, when it is continually changed according to nature. That is contrary according to place which is very much distant according to a right line. But that is successive, between which and that to which it is consequent nothing of the same kind intervenes; when it is after the principle, either by position alone, or form, or some other mode thus defined. Thus, lines *succeed* or are consequent to a line, monads the monad, and houses a house. Nothing, however, hinders but that something else may subsist between them. For that which is successive is successive to something, and is something posterior: for one is not successive to two, nor the Calends to the Nones. That is *coherent* which being *successive* touches. But, since every mutation is in things opposite, and these are contraries and contradiction, and there is no medium of contradiction, it is evident that there is a medium in contraries. But the *continuous* has something of the nature of the *coherent*, or of the *tangent*. And things are called continuous, when the boundaries of each by which they touch and are continued are one and the same. So that it is evident that the continued is in those things, from which one thing is naturally adapted to be produced according to contact. And it is also evident that the successive ranks as the first: for it is necessary that whatever touches should be successive, but not every thing which is successive touches. Likewise, if a thing is continuous, it is necessary that it should touch; but if it touches it is not yet continuous. But in those things in which there is not contact there is not natural coherence. So that a point is not the same with the monad; for with points there is contact, but this is not the case with monads: for these are successive to each other; and something subsists between points, but not between monads.

ARISTOTLE'S

ARISTOTLE'S METAPHYSICS.

B O O K XII.*

C H A P. I.

THE present speculation is concerning essence; for the principles and causes of essences are here investigated. For, if the universe is as one whole, essence will be its first part; or, if things subsist in a consequent order, after this manner also essence will be first, and afterwards quality or quantity. But at the same time, in short, neither are these beings, but qualities and motions, in the same manner as that which is not white, and that which is not straight. For, we also say that these *are*, as for instance, that such a thing *is* not white. Further still: no one of the rest has a separate subsistence. And the truth of this is in reality testified by the antients: for they investi-

* It is well observed by Alexander, that Aristotle in this book discourses of the first principle of things, for the sake of which the whole of the present work was composed. But, because, says he, the appellation of principle is multifariously assumed, for matter, form, and privation are each of them called a principle; hence, Aristotle in the first place summarily discusses whatever pertains to a division of this kind, that by a convenient method, and in a compendious way, we may easily and rightly investigate the difference between this and other principles. He further observes; that since one among the proposed questions was, whether there are the same principles of all things, or different principles of different things, which has not yet been solved† by Aristotle; hence, he again mentions causes, that he may demonstrate that in one respect there are the same, and in another different principles of all things.

† A solution, however, of this is given in the Notes to the third book.

gated

gated the principles, elements, and causes, of essence. Those, indeed, of the present time rather consider universals as essences: for genera are universals, which they say are rather principles and essences, because they investigate logically. But the ancients called particulars essences, such as fire and earth, but not a common body. But there are three essences: one, sensible; of which one part is eternal*, and another corruptible, as all men acknowledge, such as plants and animals. Of this sensible essence it is necessary to admit the elements, whether one or many. But another essence is immoveable, which, according to some, has a separate subsistence. Others, again, give it a twofold division; others place in one nature forms, and mathematical entities; and others consider mathematical entities alone. The sensible essence, therefore, belongs to the physical science (for it subsists with motion): but the immoveable essence, to another science, if they have no principle in common.

CHAP. II.

BUT sensible essence is mutable. If, therefore, mutation is from opposites, or from things subsisting between opposites, but not from all opposites (for a white colour is not from voice), but from that which is contrary, it is necessary there should be something which may be changed into contrariety; for contraries are not changed. Besides, this abides, but that which is contrary does not abide. Hence there is a certain third thing besides contraries, viz. matter. If, therefore, mutations are four in number, viz. either in substance or in quantity, in quality or in place, and simple generation as also corruption is a mutation according to substance, but augmentation and diminution according to quantity, alteration according to passion, and location according to place; if this be the case, the several mutations will be into contraries. It is necessary, therefore, that matter should be changed, which is able to pass into both. But, since being is twofold, every thing which is changed is changed from that which is in capacity into that which is in energy: as, from white in capacity, into white in energy; and in a similar manner with respect to augmentation and diminution:—hence, not only all things may be generated accidentally from non-entity, but likewise from being; from being indeed in capacity, but from non-being in energy. And

* Viz. The celestial spheres, and the stars which they contain.

this.

this is *the one* of Anaxagoras. For it is better to assert this, than that all things subsisted together: it is likewise preferable to the mixture of Empedocles and Anaximander; and, as Democritus says, all things were together in capacity, but not in energy: so that these men touched upon matter. But all such things as are changed have matter, though in some things it is of a different kind from that of others: for the matter of those perpetual natures* which are not generable, but moveable according to local motion, is itself not generable, but is only moved from one place to another. But it may be doubted from what kind of non-being generation subsists: for non-being is threefold†. If, therefore, any thing is in capacity, from this generation will subsist, yet not from any thing indiscriminately, but one thing will be generated from another. Nor is it sufficient to say that all things subsisted together; for things differ in matter. For why were things infinite in number produced, and not one thing, since intellect is one? So that, if matter is one, that would have been generated in energy of which the matter is in capacity. There are, therefore, three causes and three principles; two indeed contrariety, of which one kind is reason and form, but the other privation: and the third principle is matter.

C H A P. III.

IN the next place it is requisite to know that neither matter nor form is generated; I mean that matter‡ and that form which subsist at the extremity of things: for every thing which is changed is changed by something, and into something. By something, indeed, viz. the first mover; but that in which it is changed is matter; and that into which it is changed is form. An infinite progression, therefore, must take place, if not only the brass is made round, but the roundness also, or the brass, is generated. It is therefore necessary to stop. After this, it must be shown that every essence is generated from that which has the same appellation with itself; for those things which

* Viz. Of the celestial bodies.

† Viz. *Non-being* is either that which is false, in the same manner as being is that which is true; or it is that which in no respect is; or that which in capacity is not.

‡ Thus, says Alexander, the four humors which are the matter of Socrates are generated, but not the last and formless matter: and again, flesh is a certain form of Socrates, but not the last, since Socrates himself is the last form.

are generated by nature, and also other things, are essences. For things are generated either by art, or nature, or fortune, or chance. Art, therefore, is a principle which subsists in another; but nature is a principle subsisting in the thing itself: for man generates man. But the remaining causes are the privations of these. Essences, too, are three in number: and one of these indeed is matter, which is some particular thing in consequence of that which it appears to be: for such things as are one by contact, and not by cohesion, are matter and a subject. But another of these is nature, which is some particular thing, and a certain habit, subsisting as a boundary. Further still: the third essence is that which consists from these, and ranks among particulars; such as Socrates or Callias. In certain things, therefore, that which is some particular thing has not any subsistence independent of a composite essence; as for instance, the form of a house, unless art is this form: nor is there any generation and corruption of these: but the house itself, which is without matter, likewise health, and every thing effected by art, both are and are not after a different manner: for if forms have any subsistence they are in things produced by nature. Hence, it is not badly said by Plato that forms are such things as have a natural subsistence, if there are forms different from these, such as fire, flesh, the head, and the like: for all these are matter, and especially belong to that essence which is the last of things. Moving causes, therefore, are antecedent to productions: but causes which subsist as reason* are consubstantial with productions. For, when a man is well, then health is present; and the form of the brazen sphere subsists together with the brazen sphere itself. But whether forms remain after separation must be considered; for nothing hinders this from taking place with some forms: as, for instance, if soul should be a thing of this kind, not indeed every soul, but intellect†; for perhaps it is impossible that this should be the case with every soul. It is evident, therefore, that ideas are not requisite on account of these things; for man generates man, some particular, some certain man. And in a similar manner with respect to arts: for the medicinal art is the reason of health.

* Viz. Formal causes.

† Viz. The rational soul which is intellectual.

C H A P. IV.

THE causes and principles of all things are partly the same and partly different; for, if any one speaks universally, and according to analogy, the causes and principles of all things are the same *. But it may be doubted whether the principles and elements of essences, and of things which subsist as relatives, are different or the same; and in like manner with respect to each of the predicaments. But an absurdity will ensue, if there are the same principles and elements of all things. For relatives and essence will subsist from the same things. What, then, will this be? For, besides essence and the other predicaments, there will be nothing common. But an element is prior to the things of which it is the element. Nor yet is essence the element of relatives, nor is any one of these the element of essence. Further still: how can there be the same elements of all things? For no element can be the same with that which is composed from elements; as, for instance, neither *b* nor *a* can be the same with *ba*. Nor is it possible that any one of the intelligible elements, viz. *the one* or *being*, can be the element of all things: for these are present with every composite nature. No composite nature, therefore, will have any subsistence, nor yet essence, nor relatives. It is, however, necessary that these should subsist. There are not, therefore, the same elements of all things. Or, as we have said, are there partly the same causes and principles of things, and partly not? As, with respect to sensible bodies, the hot is as form, and after another manner the cold, as privation; but matter is that which is first essentially both these in capacity. But essences are as well these as the things which consist from these, and of which these are the principles. Or if any thing becomes one from the hot and the cold, as flesh, or bone, still that which is thence generated must be different from these. Of these things, therefore, there are the same, but of other things different elements and principles. We cannot, however, say that the principles of all things are after this manner the same; but we may assert that this is the case according to analogy: just as if any one should say that there are three principles, form, privation, and matter. But each of these is different about every genus; as in colours, white, black, superficies, light, darkness, and air; but from these day

* Viz. Matter, form, and privation, are universally, and according to analogy, the causes and principles of material natures.

emerges, and the night. However, since not only things inherent are causes, but, of things external, such as that which moves is a cause, it is evident that principle is different from element. Yet both are causes; and into these principle is divided: but that which moves or stops is a certain principle and essence. So that there are three elements according to analogy, but four causes and principles; which four are different in different things. And the first cause, as that which moves, is different in different things. Thus, health is as form, disease as privation, body as matter, the medicinal art as that which moves. Again: a house is as form, a certain confusion as privation, the bricks as matter, and the builder's art as that which moves. And, indeed, into these things is principle divided. But, since that which moves is indeed in natural men * man, but, in things proceeding from the dianoëtic power, form, or the contrary, in one respect there will be three causes, but in another four. For the medicinal art is in a certain respect health; and the builder's art the form of the house; and man generates man. Further still: besides these, as that which is the first of all things, there will be the mover of all things.

C H A P. V.

BUT since some things are separable and others inseparable, the former are essences, and on this account are the causes of all things; because, without essences passions and motions have no subsistence. In the next place, these will be perhaps soul and body, or intellect, appetite, and body †. Further still: principles are the same after another manner by analogy, such as energy and capacity: but these also are different in different things, and in a different manner. For, in some things, indeed, the same thing is at one time in energy and at another time in capacity; as, for instance, wine, or flesh, or man. But these also fall into the above-mentioned causes. For form is energy, if it is separable, as also that which consists from both ‡; but privation is as darkness, or as one that is sick, and matter is in capacity: for this is that

* Instead of *ἐν μὲν τοῖς φύσιναις*, as in the printed text, it appears from the Commentary of Alexander, that we should read *ἐν μὲν τοῖς φύσιναις ἀνθρώποις*. For that commentator observes that Aristotle says *natural men*, on account of man itself, (*i. e.* the ideal man) who is not natural.

† Viz. The proximate causes of animated natures are perhaps soul and body, as in plants; or intellect, body, and appetite, as in man; or body and appetite, as in brutes.

‡ Viz. Form and matter.

which

which is able to become both. But those things which have not the same matter, and of which there is not the same, but a different form, differ in another manner in energy and capacity. Thus, the causes of man are the elements fire and earth as matter; his proper form; and if there is any thing else external, such as his father; and, besides these, the sun and the oblique circle, which are neither matter, nor form, nor privation, nor of the same species, but are motive natures. Further still: it is requisite to perceive, that of causes, some may be called universal and others not. The first * principles of all things, therefore, are, that which is in energy this first thing †, and something else which is in capacity ‡. But those things which are universal have no subsistence. For that which is particular is the principle, as one man is the principle of another; but there is no universal man. For Peleus is the cause of Achilles, and your father of you; and this letter *b* is the cause of the syllable *ba*; and, in short, *b* is the cause of *ba* simply considered. In the next place, the forms of essences are principles: but, as we have said, of different things there are different causes and elements. Thus, the causes of those things which are not in the same genus, such as colours, sounds, essences, quantity, are not the same except according to analogy. The causes also of those things which are in the same species are different, but they are not different in species; but because of particulars, your matter, form, and that which moves, differ in number from mine, though according to universal reason they are the same. But in an inquiry, what are the principles and elements of essences, of relatives, and qualities, whether they are the same or different, it is evident that, if they are predicated multifariously §, there are the same principles and elements of every essence; but if they are divided, there are not the same but different principles, except that there are the same in a certain respect: for, according to analogy, there are the same; because there is matter, form, privation, and that which moves. So that, after this manner, the causes of essences are as the causes of all things; because, essences being taken away, all things are taken away. Further still: that which is first is in energy. Hence, contraries are in a different manner things first, as

* That is to say, the proximate principles.

† Viz. This particular thing, as Sophroniscus is the proximate principle of Socrates.

‡ i. e. This particular matter.

§ i. e. Universally.

they

they are neither predicated as genera, nor as things multifarious. And, again, different kinds of matter are called causes: and thus we have shown what are the principles of sensibles, how many there are, and in what respect they are the same, and yet different from each other.

CHAP. VI.

SINCE it has appeared there are three essences, two indeed physical, but one immoveable, respecting this we must say, that it is necessary there should be a certain eternal and immoveable essence. For essences are the first of things; and if all essences are corruptible, all things will be corruptible. It is, however, impossible for motion either to be generated or corrupted; for it always was. This is likewise true respecting time: for it is not possible that there can be prior and posterior, time not existing. There is the same continuity, therefore, of motion, as of time: for time is either the same as motion, or a certain passion of motion. But there is not any continued motion, except that which is local; and local continued motion is that which is circular. If, however, there is something motive or effective, but not energetic, motion is not. For it is possible for that which has capacity not to energise. No utility, therefore, will ensue, though we should make eternal essences, in the same manner as those who make forms or ideas, unless a certain principle is inherent which has the power of producing mutation. Neither, therefore, will this be sufficient, nor any other essence different from forms: for, if it does not energise, there will not be motion. Nor yet will this be the case if it energises, but the essence of it is capacity: for there will not be perpetual motion: for that which is in capacity may happen not to be. It is requisite, therefore, that there should be such a principle, the essence of which is energy. Further still: it is requisite that these essences should be without matter: for it is necessary they should be eternal, if there is any thing else eternal. They are, therefore, in energy. A doubt, however, here arises: for every thing which energises appears to have the capacity of energising; but every thing endued with capacity does not energise; so that capacity will be prior to energy. But, indeed, if this were the case, nothing will have any subsistence; for it will happen, that a thing will have the capacity to be, but will not yet be.

But,

But, if the case is as theologists assert, who generate all things from night, or if as the natural philosophers, who say that all things subsisted together, the same impossible consequence will ensue. For how could matter be moved if there was no cause in energy? For the matter of a house does not move itself, but the builder's art: nor does the menstrual blood move itself, nor earth, but seeds, and human seed. On which account some have recourse to a perpetual energy, as Leucippus and Plato; for they say that motion always is, but they do not say why and what it is, nor why some things are moved differently from others; nor do they assign the cause of this perpetuity of motion. For nothing is casually moved: but it is requisite that something should always have subsisted; as at present, one thing is moved naturally after this manner, and another is moved by force, either by intellect or something else after a different manner. In the next place, what is the nature of the first motion? for this makes an immense difference. But, neither is it possible for Plato to call that a principle which moves itself, and which sometimes he considers as a principle. For, soul, as he says, is posterior * to, and at the same time consubstantial with, the heavens. To consider, therefore, capacity as prior to energy, is partly right and partly not. But in what respect it is right we have already declared. However, that energy is prior to capacity Anaxagoras testifies; for intellect is energy. Empedocles also testifies this, by introducing friendship and strife; and this is confirmed by those who assert that motion is perpetual, as Leucippus. So that chaos or night did not subsist in an infinite time, but the same things always were which now are, either by circulation or otherwise, if energy is prior to capacity. But if things are always the same, either by circulation, or in some other way, it is requisite that something should always remain which possesses sameness of energy. But to the existence of generation and corruption it is necessary there should be something which always energises variously †. It is necessary, therefore, that after this manner it should energise from itself, but in a different manner according to something else ‡. It must, therefore, either energise

* Soul, according to Plato, in the *Timæus*, is represented as posterior to the heavens, merely hypothetically, or for the sake of doctrinal order.

† i. e. Obliquely, as the sun in his annual course.

‡ i. e. Says Alexander, according to the sphere of Saturn.

according

according to that which is different, or according to the first *. But it must necessarily energise according to this †: for, again, this is the cause of energy both to the one and the other. Hence, that which is first ‡ is the better cause: for it is the cause of a perpetual sameness of energy; but something else § is the cause of variable energy. And both these are the cause of an energy eternally variable. After this manner, therefore, motions subsist. Why, then, is it requisite to investigate other principles?

C H A P. VII.

SINCE, therefore, this is the case (and if it were not so, things would subsist from night, from all things collectively and from non-entity), these questions may be solved; and there is something which is always moved with an unceasing motion; but this is a circular motion. And this is not only evident from reason, but from the thing itself. So that the first heaven will be eternal. There is, therefore, something which moves. But, since there is that which is moved, that which moves, and that which subsists as a medium between these, hence there is something which moves without being moved, which is eternal, and which is essence and energy. But it moves in the following manner: That which is desirable and that which is intelligible move without being moved. But the first intelligible is the same as the first desirable: for that which *appears* to be beautiful is desirable. But the first object of the will is that which is really beautiful. However, we rather aspire after it because it appears to be beautiful, than it appears to be beautiful because

* By the first Aristotle means the innerratic sphere.

† That is, says Alexander, it is necessary that the sun should be above and under the earth, through the motion of the innerratic sphere, and not through the sphere of Saturn. But Aristotle suggests the cause why the sun is daily above and under the earth, when he says, *For this is the cause of energy, both to the one and the other.* That is, for again the body of the innerratic sphere is the cause of the star which revolves in the sphere of Saturn becoming above and under the earth, and also to the other, that is to the sun, since the motion of the innerratic sphere is the cause that the sun and Saturn daily rise and set.

‡ That is, the innerratic sphere is the cause that the sun always revolves above and under the earth.

§ That is, the obliquity of the zodiac is the cause that the sun is at one time in Scorpio and at another time in Capricorn.

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we aspire after it. For the principle is intelligence; but intellect is moved by the intelligible. And the other co-ordination* is essentially intelligible. To this co-ordination also the first essence belongs, and likewise that which subsists simply, and according to energy. But *the one* is not the same with *the simple*: for *the one* signifies measure; but *the simple*, the mode of subsistence. Likewise the beautiful, and that which is eligible for its own sake, are in the same co-ordination: and that which is the first is always the best, or analogous to that which is best. But, that in immoveable natures there is that for the sake of which other things subsist, division manifests: for there is something to which *that for the sake of which a thing is done* belongs, of which the one is different from the other†. But the first mover moves as that which is beloved; and through that which is moved it moves other things. But if there is any thing which is moved, it may subsist in a various manner. If, therefore, the first motion is energy, so far as it is moved, it may subsist differently according to place, though not according to essence. But since there is something which moves, itself at the same time being immoveable, and subsisting in energy, this cannot subsist in a various manner: for motion is the first of mutations; and of this that which is circular. But this the first mover moves. Hence, he is necessarily being; and so far as he necessarily subsists, so far he subsists according to rectitude, and is thus the principle of things: for the necessary is multifarious. For it either signifies that which is effected by violence, because contrary to the will; or that without which a thing is not well conditioned; or that which does not admit of a various, but possesses a simplicity of, subsistence. From such a principle, therefore, heaven and nature are suspended.

But the life which he lives is the most excellent, and such as we enjoy‡ for a small portion of time; for such a life is with him perpetual. To us,

* By the other co-ordination Aristotle means the co-ordination of the beautiful; to which, according to the Pythagoreans, essence, light, triangle, the odd number, &c. belong.

† That is to say, that for the sake of which a thing is effected is different from the thing effected.

‡ That is: When from the exercise of the cathartic and theoretic virtues intellect passes into contact with intelligibles, or, in other words, with those separate incorporeal forms which are the causes of the sensible universe, then it becomes intelligible in energy, and enjoys the most excellent and blessed life, the felicity of which is indescribable, and is only known to those who are capable of such an exalted energy: for intellect may then be said to be inebriated, and to deify itself with nectar.

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indeed,

indeed, this is impossible; but not to the first mover, because his energy is pleasure*. And on this account vigilance, the energies of sense, and intellection, are most delightful. Hope, too, and memory are pleasing through energies. But essential intellection is the intellection of that which is essentially the most excellent; and the most essential of that which is most essential. Intellect, too, understands itself by the assumption of the intelligible: for it becomes intelligible by contact and intellection: so that intellect is the same with the intelligible. For intellect is the recipient of the intelligible, and of essence. But it energises possessing. Hence, that which intellect appears to possess as divine, belongs more eminently to the first intellect than to ours: and his contemplation is the most delightful, and the best. If, therefore, God always possesses that excellent condition of being which we sometimes possess, it is admirable; but, if he possesses it in a still higher degree, it is still more admirable. In this manner, however, he subsists.

Life also is present with him: for the energy of intellect is life; and he is energy. But essential energy is his most excellent and eternal life; and we say that God is an animal eternal, and the most excellent: so that life and duration continued and eternal are present with God. For God is this.

But those who are of opinion, like the Pythagoreans and Speusippus, that the most excellent and the most beautiful are not inherent in the principle of things, because the principles of plants and animals are indeed causes, but the beautiful and the perfect are in things proceeding from these, do not think rightly: for seed is from other perfect natures which have a prior subsistence: nor is seed the first thing, but that which is perfect; just as some one may say that man is prior to seed, not indeed the man who is generated from seed, but another from whom seed flows. That, therefore, there is a certain eternal immovable essence, and which is separated from sensibles, is evident from what has been said. It has also been shown† that this essence cannot possess any magnitude, but that it is impartible and indivisible; for it moves in an infinite time. But nothing finite possesses an infinite power. Since, however, every magnitude is either infinite or finite; hence, this essence will not possess

* For, since the employment or energy of the first intellect is alone the intellection of himself, i. e. an eternal and all-comprehensive view of the divine forms contained in the unfathomable depths of his essence, and since this very energy is pleasure, hence, in this pleasure he perpetually lives.

† In the eighth book of the Physics. See the Introduction to this work.

a finite

a finite magnitude: and it cannot possess an infinite magnitude, because an infinite magnitude has not any existence. It has likewise been shown that he is without passivity, and unchangeable: for all other motions are posterior to that which is local. These arguments, therefore, evince why he subsists in this manner.

C H A P. VIII.

BUT we ought not to be ignorant whether one essence of this kind is to be admitted, or more than one, and if more than one how many; but we should also call to mind the opinions of others, because, concerning the multitude of such like essences, they have said nothing certain and clear. For the opinion respecting ideas has not any apposite speculation, since those who assert that there are ideas call them numbers. But, respecting numbers, they sometimes speak of them as of things infinite, and sometimes as of things limited as far as the decad. Nothing, however, is asserted by them with demonstrative diligence, why there is such a multitude of numbers. This then must be declared by us, from the things pre-supposed and determined.

The principle and the first of beings is immoveable both essentially and according to accident: but he moves the first, eternal, and single motion. But since that which is moved must necessarily be moved by something, and that which first moves is essentially immoveable, and an eternal motion must be moved by an eternal mover, and one by one; and since we see that besides the simple lation of the universe, which we say the first and immoveable essence moves, there are also other eternal lations of the planets—(for a body which revolves in a circle is eternal and unstable, as has been shown in the Physics)—since this is the case, *it is necessary that each of these lations should be moved by an essentially immoveable and eternal essence*: for the nature of the stars is a certain eternal essence, and that which moves is perpetual, and prior to that which is moved; and that which has a priority of essence is necessarily essence. *It is evident, therefore, that there are NECESSARILY so many essences, naturally eternal, essentially immoveable, and without magnitude, for the reason already assigned.* That there are therefore essences, and which of these is first and which second, according to the same order as that of the revolutions of the stars, is evident.

But the multitude of these lations must be considered from that philosophy

of the mathematical sciences which is most peculiarly adapted to this purpose, viz. astronomy. For this contemplates an essence, sensible indeed but eternal: but the other mathematical sciences speculate no essence whatever; for this is neither effected by the science which is conversant with numbers, nor by geometry. That there are therefore many lations of the stars is evident to those who are but moderately conversant with these things: for each of the planets is borne along with more than one lation. But how many these are we shall now explain; and, that we may understand their definite number, relate what certain* mathematicians assert. As to what remains, it is proper that we ourselves should investigate some things, and ask some questions of those who search into these affairs, that we may know whether any thing appears to them in addition to what we have said. Both, however, are to be beloved, but assert is to be given to the more accurate.

Eudoxus, therefore, places the lation of the sun in three spheres, and also that of the moon; of which the first is that of the inerratic stars†; the second is through that circle which passes through the middle signs of the zodiac; and the third through that circle which is oblique‡ in the latitude of the signs. But that oblique circle through which the moon is carried, is in a greater latitude than that through which the sun is carried§. But Eudoxus places the lation of each of the planets in four spheres; and of these he considers the first and second as the same with those of the sun and moon; but the sphere of the inerratics is, according to him, similar to that first sphere of the heavens which carries all the orbs; and that which ranks under this, and is carried through the middle of the zodiac, is common to all of them. He is also of opinion that the poles of the third sphere, which is common to all, are in that sphere which is in the middle of the signs; and that the lation

* By certain mathematicians, Aristotle according to Alexander means Eudoxus and Calippus.

† That is, says Alexander, since the lation of the sun is effected by three spheres according to Eudoxus, the first of these, which comprehends the other two, and which revolves similar to the inerratic sphere, viz. from east to west, was considered by Eudoxus as inerratic with reference to the other two. Nor did he only call this first sphere of the sun inerratic, but likewise the first and largest sphere of each of the other planets.

‡ That is, according to Alexander, that circle which the sun appears to describe from its centre, while it is borne along by that sphere to which it is fixed.

§ The latitude, says Alexander, of the obliquity of that circle which the moon appears to describe with its centre, is greater than the latitude of the obliquity of that circle which the sun appears to describe.

of

of the fourth declines from the middle of the third. Likewise that the poles of the third sphere are the proper poles of the other spheres; but that Venus and Mercury have the same poles.

But Calippus gives the same position to the spheres, that is, the same order of distance, as Eudoxus: and, with respect to their multitude, he agrees with him in the number belonging to Jupiter and Saturn, but is of opinion that still two spheres require to be added to the sun and moon in order to solve the phænomena; and to each of the remaining spheres of the planets he adds one. But it is necessary, in order, when all of them are collected together, to assign the causes of the phænomena, that there should be other revolving spheres less in number by one, than those which carry the planets, and which always restore in the same position the first sphere of that star which ranks in an inferior order: for thus alone can all things be effected by the lation of the planets. Since, therefore, with respect to those spheres in which the planets are carried, some are eight, and others twenty-five; of these, those only ought not to have revolving spheres in which the lowest* star is carried. And those, indeed, which revolve the spheres of the two first stars will be six; but those which revolve the spheres of the four posterior stars will be sixteen. The number, therefore, of all the spheres, that is, both of those that carry and those that revolve the stars, will be fifty-five. But, if those motions of the sun and moon which we have mentioned are not added, the number of all the spheres will be forty-seven. Let this then be the multitude of the spheres: so that it is rational to conceive that there are as many immoveable and as many sensible essences and principles as we have enumerated; for to prove † that there must necessarily be this number, must be left to those who are better qualified for such an undertaking.

But if it is not possible that there can be any lation which does not contri-

* Viz. The moon; for she is the lowest of the planets.

† “Aristotle, says Alexander, having related the number of the spheres, which according to Eudoxus are 26, according to Calippus 33, and according to his own invention 55; and having besides this demonstrated that one simple and eternal motion emanates from one simple and indivisible mover, he confidently asserts that it is rational to conceive that there are as many immoveable and as many sensible essences and principles as he has enumerated. But because he has only related, but has not also demonstrated, that there are 55 spheres, and has asserted that it is reasonable to conceive that there are as many immoveable essences as there are spheres; hence he subjoins, that a demonstration that there must necessarily be this number, must be left to those who are better qualified for such an undertaking.”

bute

bute to the lation of a star; and if it is requisite to conceive that every nature and every essence which is impassive, and capable of subsisting from itself, is allotted the best end, there will be no other nature besides these, but this will necessarily be the number of essences. For, if there are others, they will be motive, as being the end of lation: but it is impossible that there can be any other lations than those which we have enumerated. But this may be rationally inferred from these revolving bodies themselves: for, if every thing which carries naturally subsists for the sake of that which is carried, and every lation is of something which is carried, no lation will subsist for its own sake, nor for the sake of another lation, but it will subsist for the sake of the stars. For, if lation should subsist for the sake of lation, it will also be requisite that this latter should subsist for the sake of other lations. So that, since it is impossible that there can be an infinite progression, the end of every lation will be some one of the divine bodies which revolve in the heavens. But that heaven * is one is manifest: for, if there were many heavens, as there are men, the principle about each will be one in species, but many in number. But such things as are many in number are connected with matter: for there is one and the same reason of the many, as of man, but Socrates is one. But that which ranks as the first among formal causes is not connected with matter; for it subsists in energy. Hence, that which first moves immoveably is one both in reason and number; and, consequently, that which is always and continually moved is also one. There is therefore only one heaven or universe.

BUT OUR ANCESTORS AND MEN OF GREAT ANTIQUITY HAVE LEFT US A TRADITION INVOLVED IN FABLE, THAT THESE FIRST ESSENCES ARE GODS †, AND THAT THE DIVINITY COMPREHENDS THE WHOLE OF NATURE.

* i. e. The universe.

† If the doctrine of polytheism consisted in admitting that there is a multitude of principles equal in dignity and power to the great and ineffable principle of things, the censure which has been repeatedly passed on this doctrine, with so much zeal, by modern theologians, would be highly just, since it is a hypothesis no less false in its principles than dire in its consequences. This, however, was far from being true of the polytheism of the ancient world, as is largely shown by Dr. Cudworth in his *Intellectual System*, and must be obvious to every one who reads with attention the remains of Grecian and Roman literature. But, on the other hand, to censure the doctrine that producing causes of things subsist concentrated and rooted in one first producing cause, but with due subordination to their comprehending principle, is to oppose one of the most sublime conceptions of the human mind, sedulous to subvert the heaven-built fabric

NATURE. The rest indeed is fabulously introduced for the purpose of persuading the multitude, enforcing the laws, and benefiting human life. For they

fabric of intellectual philosophy, and, in mythological language, to war on the Olympian gods.

To such, indeed, as have not regularly studied the scientific writings of Plato and Aristotle, it will doubtless in the first place seem absurd to introduce a multitude of principles in order to the production of the universe. To these, one principle appears sufficient for the purpose; and the hypothesis of a multitude subsisting in conjunction, and co-operating, with him, is considered as useless, and as tending to diminish the power and sully the dignity of the parent of things. They will likewise deem it impossible to conceive how a multitude of principles can have a distinct energy of their own, at the same time that they are comprehended in, and energise together with, a higher cause.

The first of these objections may be easily removed, by considering that the most perfect mode of production is the *essential*, or, in other words, when a being produces by its very nature or essence. Instances of this *essential* mode of production are seen in fire and snow, the former *essentially* imparting heat, and the latter cold. This mode is more perfect than that which is attended with *deliberation*, because more extended. Thus, all such beings as produce *deliberatively*, as is the case with rational souls like ours, are at the same time connected with the *essential operation*; such as is the energy of nature in generation, nutrition, and increase. But the energy of nature is present with beings to whom the power of deliberation is unknown. And hence the *essential* is more extended than the *deliberative* energy. The essential energy, therefore, must be the prerogative of the highest producing cause, because more powerful than the deliberative: for superiority of power is always the characteristic of a superior cause.

If, therefore, the great principle of things operated from his very nature in producing all things, and this without the conjunction of subordinate causes, and if he is *the one itself* (since nothing is more excellent than unity), all things would have been profoundly one, without any apparent distinction and separation: for, in productions of this kind, the effect is always *secondarily* what the cause is according to a *primary* mode of subsistence. The existence, therefore, of the corporeal world necessarily proves the existence of lesser producing causes co-operating with the *one* father of all in the production of things.

The second objection, respecting the distinct energy of subordinate causes, or principles, may be removed by diligently attending to the different powers of the human soul. For in these powers, as images, we shall conspicuously see, how a multitude of divine natures may possess a distinct energy of their own, at the same time that they are comprehended in, and energise together with, a superior nature. If we survey, then, the *gnostic powers* of the soul, we shall find that they are accurately five in number, viz. *intellect*, the *dianoëtic power*, *opinion*, *phantasy*, and *sense*.

Intellect is that power by which we understand simple self-evident truths called axioms, and are able to pass into contact with intellectual forms separated from all connection with matter.

By the *dianoëtic power* we reason scientifically.

Opinion is that which knows the universal in sensible particulars, as that every man is a biped; and the conclusion of the *dianoëtic power*, as that every rational soul is immortal; but it only knows the *eri*, or *that* a thing is, but is perfectly ignorant of the *dei*, or *why* it is.

The

they ascribe to the first essences a human form, and speak of them as resembling other animals, and assert other things consequent and similar to these.

The *phantasy* is that power which apprehends things clothed with figure, and may be called a *figured intelligence* (*μορφωτικὴ νοησις*.)

Lastly, *sense* is that power which is distributed about the organs of sensation, which is mingled with passion in its judgment of things, and alone apprehends that by which it is externally agitated.

Now, it is evident, since the energies of these powers are perfectly distinct from each other, that the powers themselves, which are the sources of these energies, must also be distinct.

Again: it is evident that *desire*, which tends to one thing, *anger*, which aspires after another thing, and *free-will*, or that *deliberative tendency to things in our power*, which the Greeks call *proairesis* (*προαίρεσις*), are so many distinct vital powers of the soul. But above both the gnostic and vital powers is *the one*, or the summit of the soul, by means of which we are enabled to say, I perceive—I opine—I reason—I desire—I deliberate—which summit follows all these energies, and energises together with them; for we should not be able to know all these, and to apprehend in what they differ from each other, unless we contained a certain indivisible nature, which subsists above the common sense, and which, prior to opinion, desire, and will, knows all that these know and desire, according to an indivisible mode of apprehension.

It must, however, be carefully observed, with respect to those mighty powers which subsist in unproceeding union in the ineffable principle of things, that, as their union with this principle is infinitely more transcendent, their characteristic properties are likewise infinitely more distinct from each other, and from the one cause of all, than the union and distinction between the human soul and its different powers.

But as this is a subject of all others the most important, it is requisite to be more explicit. If then it is necessary that the progression of beings should be continued, and that no vacuum should intervene either in incorporeal natures, or in bodies themselves, it is also necessary that every thing which has a natural progression should proceed through similitude; since it is by no means lawful that the thing caused should be the same with its cause: for, if that which is second were the same with that which is first, each would be similarly the same, and one would not be the cause, and the other the thing caused. But if they are alone different, they can never be conjoined with each other, nor can the one participate of the other: for conjunction and participation are a communion and sympathy of participants, and the natures they participate. And if they are at the same time both *same* and *different*; since in this case there is identity, defect, and something which is vanquished by a power contrary to sameness; *the one itself* will no longer be the principle of the progression of beings, nor will every generative cause have a subsistence in the order of *the good* prior to secondary causes: for *the one* is not the cause of division, but of friendship; and *the good* converts generated natures to their causes. But the conversion and friendship of secondary towards prior natures subsists through similitude, and not through a dissimilar nature. If, therefore, *the one* is the cause of the universality of things, and if *the good* is the object of vehement desire to all things, it will everywhere constitute through similitude the progeny of antecedent causes: so that the progression of things will subsist according to *the one*, and the conversion of these progressions will be directed to *the good*. For neither is conver-

these. BUT IF AMONG THESE ASSERTIONS ANY ONE SEPARATING THE
 REST RETAINS ONLY THE FIRST, VIZ. THAT THEY CONSIDERED THE
 FIRST

tion without similitude, nor can the generation of effects which return to their kindred principles ever subsist without this.

But that which immediately follows, and is demonstrated from this, is, that it is necessary every monad should produce a number of the same order with itself, viz. *Nature*, a natural number; *Soul*, one that is animastic, and *Intellect*, an intellectual number. For, if whatever possesses a power of generating generates similars prior to dissimilars, as we have already demonstrated, hence every cause must deliver its own form and idiom to its progeny; and before it generates that which gives subsistence to progressions far distant and separate from its nature, it must constitute things proximate to itself according to essence, and conjoined with it through similitude. Every monad, therefore, constitutes a multitude, indeed, as generating something posterior to itself, and dividing the powers which had a prior occult subsistence in itself. For things which subsisted uniformly, and conjointly, in the monad appear separately in the progeny of the monad. And the truth of this, indeed, *universal Nature* herself declares, comprehending in one the productive principles of all things contained in the heavens and in the sublunary regions; but distributing her own powers to the natures which, proceeding from her monad, are divided about the fluctuating empire of bodies. For the *natures* of fire, earth, and the moon, possess their idioms and forms from *universal nature*, with which they energeise, and contain its peculiar distributions. But this also the monad of mathematics and numbers evinces: for, since this is primarily all things, and since it spermatically constitutes the forms of numbers in itself, it distributes different powers to numbers externally proceeding from its nature. For it is impossible that a generated nature should at once receive the whole abundance of its generating cause: and it is necessary that the cause of all things, having a prior subsistence, should appear as a prolific power. Multitude, therefore, subsists about the monad, and number, distributing the properties which abide collectively in the monad. Because, therefore, as we have before observed, that which is similar is more conjoined with its cause than that which is dissimilar; hence one progression will be a multitude similar to the monad from which it proceeds; but the other will be a multitude of dissimilars. But the multitude which is similar to the monad will be that in a divided manner which the monad is indivisibly. For, if the monad possesses power, and a peculiar hyparxis*, the multitude proceeding from it will likewise contain the same form of hyparxis, with a remission as to the whole.

But after this it is necessary to consider in the third place, that, of progressions, such as are nearer to their cause are indicative of a greater multitude of things, and are at the same time in a certain respect equal to their containing causes: but that such as are more remote possess a less extended power of signification; and, on account of the diminution of their power, change and diminish at the same time the amplitude of production. For if, of progressions, that which subsists the first in order is more similar to its principle, and that which gives subsistence to the greatest number is both with respect to essence and power more similar to the generating principle of all things, it is necessary that, of secondary natures, such as are nearer to the monad, and which receive dominion after it, should give a greater extent to their productions; but that

* Hyparxis signifies in any being the summit, or as it were flower, of its nature.

FIRST ESSENCES TO BE GODS, HE WILL THINK IT TO BE DIVINELY SAID:
AND IT MAY BE PROBABLY INFERRED, THAT AS EVERY ART AND PHI-
LOSOPHY

such things as are more separated from their primary monad should neither pervade in a similar manner through all things, nor extend their efficacious energies to far distant progressions. And again: as similar to this, it is necessary that the nature which gives subsistence to the greatest number of effects should be placed next to the monad, its principle; and that the nature generative of the most numerous progeny, because it is more similar to the supplying cause of all things than that which is generative of a few, must be placed nearer to the monad, according to *hyparxis*. For, if it is more remote, it will be more dissimilar to the first principle; but, if it is more dissimilar, it will neither possess a power comprehending the power of similar natures, nor an energy abundantly prolific. For an abundant cause is allied to the cause of all. And universally, that which is generative of a more abundant, is more naturally allied to its principle than that which is productive of a less numerous progeny. For a defect of power is effective of fewer productions: but a subjection of essence is a defect of power; and a subjection of essence becomes redundant, on account of dissimilitude with its cause, and distance from its principle.

Again, therefore, in addition to what we have previously demonstrated, we shall assert that which possesses the most indubitable truth; I mean, that it is requisite, prior to the causes which are participated, that imparticipable * causes should every where have a prior subsistence in the universality of things. For, if it is requisite that a cause should have the same relation to its progeny as *the one* to the universal nature of beings, and that it should naturally possess this order towards things secondary; and if *the one* is imparticipable, as being equally exempt from all beings, and as that which is productive of all things uniformly;—in consequence of this, it is necessary that every other cause which describes the excellency of *the one* in all things should be exempt from the beings subsisting in secondary ranks, and from the natures participated by them. And again, it is requisite that every imparticipable and primary cause which is similar to *the one*, should establish monads of secondary natures similar to itself prior to such as are dissimilar. I say, for instance, it is requisite that one soul should distribute many souls to different natures; and one intellect participated intellects to many souls. For thus every first exempt genus among the divine orders will be universally distributed analogous to *the one*. And secondary natures which participate kindred causes will be analogous to these exempt genera; and, through the similitude of their kindred causes, will be conjoined with their imparticipable principle. Hence, prior to the forms subsisting in other natures, those are established which subsist in themselves; and prior to composite causes such as are exempt; and imparticipable monads prior to such as are participable. And consequently (as that which is demonstrated at the same time with this) the exempt causes are generative of such as are composite, and imparticipable natures extend participable monads to their progeny. And natures which subsist in themselves produce the powers which are resident in other natures.

It is therefore necessary from the preceding axioms, since there is one unity, the principle of the universe, from which every *hyparxis* derives its *hypostasis*, that this unity should produce

* One thing is said to be imparticipable with respect to another, to which it is superior, when it is not consubstantial with it.

from

LOSOPHY HAS BEEN INVENTED AS OFTEN AS POSSIBLE, AND HAS AGAIN PERISHED, THESE OPINIONS ALSO OF THE ANTIENTS HAVE BEEN

from itself, prior to every thing else, a multitude of natures characterised by unity and a number the most of all things allied to its cause.

For, if every other cause establishes a progeny similar to itself, prior to that which is dissimilar; much more must *the one*, since it is superior to similitude, and is *the one itself*, produce according to union its first progeny. For how can *the one* establish its processions, except in a manner characterised by unity? For nature generates things posterior to itself naturally, soul animistically, and intellect intellectually. *The one*, therefore, is through union the cause of the universality of things: and the progression from *the one* is uniform. But if *the one* is that which first produces all things, and the progression is characterised by unity, it is requisite that the multitude produced from thence should be *self-perfect unities*, the most allied of all things to their producing cause. Besides, if every monad establishes a number allied to itself, as we have previously demonstrated, by a much greater priority must *the one* itself produce a number of this kind. For, in the progression of things, that which is produced is often dissimilar to that which produces, through the over-ruling sway of diversity: and such are the last of beings, and those which are far distant from their principles. But the first number, and that which coheres to *the one*, is uniform, ineffable, and superessential, and is entirely similar to its cause. For, neither can diversity happening to first causes separate generated natures from their generating cause, and transfer them into another order; nor can a motion of the cause, producing a subjection of power into dissimilitude and infinity, produce the generation of the universality of things: but the cause of all, excelling all motion and division, according to the characteristic of unity establishes about itself a divine number, and conjoins it with its own simplicity. *The one*, therefore, prior to beings establishes the unities of beings.

For, again, according to another mode of speculation, it is necessary that such things as are first should participate the first cause through their proximate unities: for all second natures are conjoined with their antecedents through similars. Thus, bodies through particular souls are conjoined with universal soul; souls with universal intellect, through intellectual monads; and first beings with *the one itself*, through uniform hyparxes. For, *being itself*, according to its own nature, is dissimilar to *the one*. For essence, because indigent of an unity externally assumed in order to accomplish the first union, cannot of itself be conjoined with that which is superessential, and is far distant from its nature. But the unities of beings which subsist from the imparticipable and exempt unity are able to conjoin beings with *the one itself*, and convert them to their own superessential natures. And Parmenides, demonstrating this in his second hypothesis, connects *the one* with *being*, contemplates all things about *the one*, and demonstrates that this nature, which proceeds and finishes its progression with the last of things, is *the one itself*. For it is necessary that the unities should be established prior to true beings themselves: since, as Timæus observes, it is not lawful for him who is the first, to produce any thing except that which is the most beautiful of all. But this is the most similar to that which is singularly the best.

But a multitude characterised by unity is the most similar to *the one*. For the Demiurgus of the universe, because he is good, constituted all things similar to himself. Much more, there-

BEEN PRESERVED AS RELICS TO THE PRESENT TIME. Of the opinions of our fathers, therefore, and men of the highest antiquity, thus much only is manifest to us.

CHAP.

fore, must the fountain of universal good produce and establish in beings *goodnesses* naturally conjoined with himself. There is, therefore, one god, and many gods; one unity, and many unities, prior to beings themselves; and one goodness, and many posterior to the first goodness, through which that beneficent intellect the Demiurgus, and every intellect, is divine, whether it is an intellectual or intelligible intellect. And that which is the first superessential is *the one*; after which many superessentials subsist. Whether, then, is this multitude of unities imparticipable, as *the one itself*, or is it participated by beings, so that the unity of every being is as the flower, summit, and centre of that being about which it subsists? But if these unities are imparticipable, in what respect do they differ from *the one*? For each of these unities is one, and has the first subsistence after *the one*. Or how, since they are exuberances of the first cause, were they constituted by it? For it is every where necessary that the nature which is second should be subject to that which is prior to itself, should fall off from its union, and on account of some addition should diminish the monadic simplicity of that which is first. What addition, therefore, or redundancy can we assert in addition to *the one*, if each of these unities is an unity by itself? For, if every unity is both one and many, we shall appear to transfer the property of being to the unities themselves. But if it is one only, in the same manner as that which is one itself, why does this latter possess a cause exempt from all other causes, while each of the unities is allotted a secondary dignity? On this hypothesis, therefore, we shall neither preserve the supremacy of the first cause over posterior natures, nor establish the progression of the unities from the first, unconfused either with respect to themselves, or the one principle of their subsistence.

But neither shall we believe in Parmenides*, producing *the one* together with being, and demonstrating that there are as many parts of *the one* as of being, and that every being participates of *the one*; that *the one* subsists every where together with being; and lastly, that *the one* of the second hypothesis participates of, and is participated by, being; the mode of participation not being the same in either: for this one participates of being, as that which is not the first one, nor exempt from being; but as illuminating true-subsisting essence. But being participates of *the one*, as contained by *the one*, as replenished with divine union; and as returning to that which is *the one itself*, and imparticipable: for the unities which are participated conjoin beings with *the one*, which is exempt from the universality of things; in the same manner as participated intellects unite souls with universal intellect, and participated souls conjoin bodies with universal soul. For it is not possible that the dissimilar genera of secondary natures should be immediately united with that cause which is exempt from all possible multitude. But it is necessary that this conjunction should take place through similar natures: for a similar multitude, so far as it is multitude, participates of that which is dissimilar: but, so far as it is similar to the monad prior to itself, so far it is conjoined with this monad. This similar multitude, therefore, being established in the midst of similitude and multitude, becomes united with the whole, and with *the one*, which is prior to all multitude; but contains in itself far-distant progressions, and such as are dissimilar to *the one* of its own nature. And through this *one* all

* See my translation of that Dialogue.

things

C H A P. IX.

BUT there are certain doubts respecting intellect; for it seems to be the most divine of things which are apparent: yet, by what mode of subsistence

things return to this similar multitude, and extend themselves towards the first cause of the universe; dissimilars indeed through similar natures, but similars through themselves. For similitude essentially collects and conjoins many things in one, and converts second natures to the monads which are prior to themselves: for the very subsistence of similitude proceeds from *the one*. Multitude, therefore, is conjoined with *the one*, from which it derives its progression: and hence, similitude is that which causes many things to be allied and sympathise with each other, and to subsist in friendship among themselves and with *the one*.

No objections of any weight, no arguments but such as are sophistical, can be urged against this sublime theory, which is so congenial to the unperverted conceptions of the human mind, that it can only be treated with ridicule and contempt in degraded, barren, and barbarous ages. It is this theory, which those who declaim against the theology of the ancients should first endeavour to understand, before they attempt to subvert. At the same time, unfortunately, it is a theory which has been so entirely neglected, that it is not to be discovered in any writing since the time of the emperor Justinian. Indolence and priestcraft have hitherto conspired to defame those inestimable works*, in which this and many other sublime and important theories can alone be found; and the theology of the Greeks has been attacked with all the insane fury of ecclesiastical zeal, and all the imbecil flashes of mistaken wit, by men whose conceptions on the subject, like those of a man between sleeping and waking, have been *turbid and wild, phantastic and confused, preposterous and vain*.

We find, however, from the passage before us (which is certainly of inestimable value) that the doctrine that first essences are gods is derived from men of great antiquity, and we have the testimony of Aristotle himself that it is a *divine doctrine*. He likewise very justly observes, that a human form and the forms of other animals were ascribed to the first essences, for the purpose of *persuading the multitude, enforcing the laws, and benefiting human life*. For, the multitude being merged in sense can only by sensible images obtain a far-distant glimpse of incorporeal natures; and the whole of the human nature is from its connection with body adapted to be led back through images to exemplars, and through sense to intellect. Hence, Aristotle very properly adds, that human life was benefited by the fabulous part of the ancient theology. For, as Sallust, *On the Gods and the World*, beautifully observes, "since the providence of the gods is every where extended, a certain habitude or fitness is all that is requisite in order to receive their beneficent communications. But all habitude is produced through imitation and similitude. Hence, *temples* imitate the heavens, but *altars* the earth; *statues* resemble life, and on this account they are similar to animals; and *prayers* imitate that which is intellectual; but *characters* superior ineffable powers; *herbs and stones* resemble matter; and animals which are sacrificed, the irrational life of our souls. But, from all these, nothing happens to the gods beyond what they already possess; for, what accession can be made to a divine nature? But a conjunction with our souls and the gods is by these means produced."

* Those of the latter Platonists, viz. Plotinus, Porphyry, Jamblichus, Proclus, Ammonius, Olympiodorus, &c.

it is so, it is difficult to determine. For, if it is void of intellection, and is like one sleeping, what will there be venerable in such a condition of being? But, if it possesses intellection, and yet something else has dominion over or is the author of this, then its essence will not be intelligence, but capacity, and so it will not be the most excellent essence. For that which is honorable is present with it through intellection. Further still: whether its essence is intellect or intelligence, what does it understand? For, either itself understands itself, or it understands something else. And if something else, either always the same, or a different thing. Is it, therefore, of no consequence whether it understands that which is beautiful, or any thing which may casually present itself? Or is it absurd to suppose that it cogitates about certain things? It is evident, therefore, that he understands that which is most divine and most honorable, and that he is not changed. For the mutation would be into something worse, and a thing of this kind would now be a certain motion. In the first place, therefore, if his essence is not intelligence, but capacity, it is reasonable to conclude, that continuity of intellection is laborious to him; and in the next place it is evident that there will be something else more honorable than intellect, viz. the intelligible, or the object of intellection. Besides, intellection and intelligence will be present with him when understanding the worst of things. This, therefore, must be avoided. For, not to perceive certain things is better than to perceive them. Hence, intelligence* will not be that which is most excellent. He understands himself†, therefore, if he is the best of all things; and intelligence is the intelligence of intelligence.

But

* Since, according to Aristotle, the first cause is the object of desire to all things, he cannot subsist as *intelligence*. For, that which is the object of desire to all things is that of which all things participate, or this desire would be vain. But all things do not participate of intelligence, since some things possess being alone. Things, therefore, originate from the *intelligible*, and not from intelligence.

† The first intellect understands himself, and by knowing himself knows every thing of which he is the cause, possessing a knowledge transcendently more accurate than that which is co-ordinate to the objects of knowledge; since a causal knowledge of every thing is superior to every other kind of knowledge. Without busily attending, therefore, to the objects of his intellection, by alone knowing himself he knows all things. Nor is he indigent of sense, or opinion, or science, in order to know sensible natures; for it is himself that produces all these, and that in the unfathomable depths of the intellection of himself comprehends an united knowledge of them according to cause, and in one simplicity of perception:—just as if some one, having built a ship, should place in it men of his own formation, and, in consequence of possessing a various art,

But science, sense, opinion, and the dianoëtic power always appear to be employed about something different from themselves; so that the principal design of each of these is not the speculation of itself. Further still: if intellection is different from that which is apprehended by intellect, according to which of these is excellence of subsistence present with him? For the being of intelligence is not the same as that of the intelligible. Or shall we say, that in some things science is the thing itself which is the object of science? In effective sciences*, indeed, essence and form are without matter; but in the contemplative sciences this must be affirmed of reason, the thing, and intelligence. Hence, in things without matter†, since the intelligible is not different from intellect, it is the same with it. Intelligence also is the same with the intelligible. Further still: a doubt remains, whether the intelligible is a composite nature; for, if this be the case, it will be changed in the parts of the whole. Or, shall we say that every thing without matter is indivisible? In the same manner, therefore, as the human intellect, or the intellect of composite natures, subsists for a certain time (for this in-

art, should add a sea to the ship, produce certain winds, and afterwards launch the ship into the new-created main. Let us suppose, too, that he causes these to have an existence by merely conceiving them to exist, so that, by imagining all this to take place, he gives an external subsistence to his inward phantasms, it is evident that in this case he will contain the cause of every thing which happens to the ship through the winds on the sea; and that by contemplating his own conceptions, without being indigent of conversion to outward objects, he will at the same time both fabricate and know these external particulars. Thus, and in a still greater degree, the first or intelligible intellect, possessing the causes of all things, both gives subsistence to and contemplates whatever the universe contains, without departing from the speculation of himself.

* It is well observed by Alexander, that Aristotle here by effective sciences means the art of building, and the like.

† Viz. In intelligibles properly so called. Hence the first intellect is at the same time both *intellect* and *intelligible*. It is intellect considered as *understanding* itself, but intelligible as *understood* by itself. But participable which subsists posterior to imparticipable intellect;—or, in other words, intellect consubstant with which is posterior to intellect unconnected with soul,—understands itself, and the intellect prior to itself. For every intellect must either understand itself, or that which is above, or that which is posterior to itself. But if it understands that which is posterior to itself, it will be converted to that which is worse than itself. If it understands that which is above itself, if this is through the knowledge of itself, it will at the same time understand itself and that which is superior. But if it alone understands that which is superior, it will, though intellect, be ignorant of itself. However by knowing that which is prior to itself, it also knows itself. There is, therefore, in intellect the intelligible, and in the intelligible intellect; and one intellect is more total, and another more partial.

tellect

telleet does not possess the excellent condition of its being in this or that portion of time, but in a certain whole *), so does the first intelleet subsist for ever; and thus through all eternity itself possesses the intelligence of itself.

C H A P. X.

It must also be considered in what manner the nature of the universe possesses the good and that which is most excellent, whether as something separate, and itself subsisting by itself, or as order †, or as both these, in the same manner as an army. For the good of this consists in order, and in its commander, who is the good of the army in a still greater degree. For the commander is not on account of the order, but the order on account of the commander. But all things are in a certain respect co-ordinated, though not in a similar manner, such as aquatic and aerial animals and plants. Nor do they subsist in such a manner as that one has nothing in common with the other, but there is something in which they all agree: for all things are co-ordinated to one thing. But as, in a house, those who are free are permitted to act just as they please, in all or in most things which contribute to the common good; but this is only granted in a small degree to slaves and irrational animals, since they act for the most part casually (for the nature ‡ of each of them is a principle in them of this kind); I say, in this manner it is necessary that all things should subsist in order to effect separation. And as in a house, so in the universe, there are other things of which all participate in order to the constitution of the whole.

But we ought not to be ignorant of the impossible or absurd consequences which happen to those who speak differently, nor yet of their assertions who speak more elegantly, and whose opinions are attended with the fewest doubts. For all philosophers consider all things as produced from contraries. But

* Intellect, when it apprehends that which is intelligible, does not understand one part of it at this time, and another part of it at a different time; for, thus, the intelligible or proper object of intellect would be divisible; but it understands it in an indivisible instant. For this is what Aristotle means by a certain whole.

† Since Aristotle, as we have also observed in the Introduction, admits that there is a twofold order, one in the universe, and another in the cause of the universe, he must also admit that there is a twofold series of forms; one incorporeal and intelligible, subsisting in this cause, and the other corporeal and sensible.

‡ That is to say, the nature of those things which contribute to the nature of the universe.
neither

neither are all things generated; nor is it rightly said that all things are from contraries; nor do they appear to have informed us how those things in which contrariety is inherent consist from contraries: for contraries are not passive to each other. But this difficulty is solved by us in a rational manner, by introducing a certain third nature. Others make one of the contraries to be matter, as those who subject the unequal to the equal, or multitude to *the one*. This, however, is solved after the same manner: for matter which is one is not contrary to any thing. Further still: all things will participate of evil, except *the one*; for evil itself is the other of the elements. But, according to others, good and evil are not principles, though in all things *the good* is most eminently a principle. Others, again, are right in considering *the good* as a principle; but they do not say how it is a principle, whether as the end, or as that which moves, or as form. Empedocles* too acts absurdly; for he makes friendship to be *the good*. For friendship, according to him, is a principle, and that which moves (for it congregates); it is also as matter, for it is a part of that which is mixed. However, though friendship should happen to subsist as matter, as a principle, and as that which moves, yet its essence would not be the same with the essence of these. Which of these, therefore, will friendship be? But it is also absurd that strife should be incorruptible; since this very thing is the nature of evil itself.

But, according to Anaxagoras, *the good* is a principle so far as motive. For intellect moves; but it moves for the sake of something; so that it will be different from that for the sake of which it moves, unless it subsists as we affirm it to subsist: for the medicinal art is in a certain respect health. He has also acted absurdly, in not making a contrary to *the good*, and to intellect. But all those who speak of principles as contraries do not use contraries, as will be obvious to him who does not negligently consider their opinions. And no one assigns a reason why some things are corruptible, but others incorruptible: for they make all things from the same principles. Further still: some generate all things from non-entity: but others, that they may not be compelled to do this, make all things to be one. Again: no one assigns a reason why generation will perpetually exist; nor does any one say what is the cause of generation. And both those who make two principles, and those who introduce ideas, necessarily require another more powerful principle; because there is a

* See the Notes to the thirteenth book.

principle more powerful than these. For why is matter participated, or why does it still continue to participate ideas? And to others, indeed, it is necessary that there should be something contrary to wisdom and the most honorable science; but this is not necessary to us. For there is not any thing contrary to that which is first; since all contraries have matter, and these are in capacity. Ignorance, too, is opposed to its contrary; but nothing is contrary to that which is first.

Further still: if there are no other natures besides sensibles, there will not be a principle and order, generation, and the celestial orbs; but there will always be a principle of a principle, as is also asserted by theologists and all natural philosophers. But if there are forms* or numbers they will not be the causes of any thing. And if this is not admitted, they will not at least be the causes of motion. Again: how can magnitude and that which possesses continuity emerge from things void of magnitude? For number will not make continued quantity, either as that which moves, or as form. Indeed there will not be any one of things contrary which has the power both of making and moving; for it may happen not to be. But energy is in a certain respect posterior to capacity. There will not, therefore, be *eternal beings*; BUT THERE ARE. Hence some one of these hypotheses must be rejected. But we have shown in what manner capacity antecedes energy. Further still: how numbers are one, or soul and body, and, in short, form and a thing, no one informs us: nor is it possible to explain this, unless he says as we do, that the cause of this, in effecting it, operates as that which moves. But those who say that mathematical number is first, and so always suppose another essence adhering in succession and other principles of every thing—these make the essence of the universe to be adventitious; (for, thus, one thing does not contribute any thing to another, whether it exists or does not exist:) and besides this, they introduce many principles. But beings are unwilling to be governed ill.

The domination of many † is not good; there is, therefore, one supreme.

* See the Notes to the thirteenth and fourteenth books.

† That is to say, the domination of many principles independent of each other is not good; for Aristotle in the preceding eighth chapter has proved that there is a multitude of principles of a nature *similar* to the first cause.

ARISTOTLE'S

ARISTOTLE'S METAPHYSICS.

B O O K . XIII.

C H A P . I.

RESPECTING the essence, therefore, of sensibles, we have shown what it is in the mode of investigation employed by us in our Physics, concerning matter, and afterwards in our inquiry concerning energy. But since our present design is to consider whether, besides sensible essences, there is a certain immoveable and eternal nature, or not, and if there is what it is, in the first place we shall take a survey of the assertions of others, that, if in any thing they have not spoken well, we may not be liable to the same accusation; and that, if there is any dogma common to us and them, we may receive it separately, and not be indignant as with a thing hostile to our design. For we must be contented if any one asserts some things better than us, and others things not worse. But there are two opinions on this subject: for they say that mathematical natures are certain essences, such, for instance, as numbers and lines, and things allied to these, and again, ideas*. However, since some consider

* Prior to a solution of the objections of Aristotle to the doctrine of ideas, it will perhaps be better to give the reader a summary view of the opinions of the Pythagoreans and Platonists on the subject, that he may be at once convinced that the arguments of Aristotle are not directed to the true and genuine, but merely to the apparent meaning of these philosophers.

The divine Pythagoras, and all those who have legitimately received his doctrines, asserted that

consider ideas and mathematical numbers as two genera; but others are of opinion that there is one nature of both; and others again assert that mathematical natures are alone essences, in the first place let us make mathematical entities the object of our consideration, without adding to them any other nature;

that there are many orders of beings, viz. intelligible, intellectual, dianoëtic, physical, or, in short, vital and corporeal essences. For the progression of things, the subjection which naturally subsists together with such progression, and the power of diversity in co-ordinate genera, give subsistence to all the multitude of corporeal and incorporeal natures. They said, therefore, that there are three orders in the whole extent of beings, viz. the *intelligible*, the *dianoëtic*, and the *sensible*; and that in each of these ideas subsist, characterised by the respective essential properties of the natures by which they are contained. And with respect to intelligible ideas, these they placed among divine natures, together with the producing, paradigmatic, and final causes of things in a consequent order. For if these three causes sometimes concur, and are united among themselves (which Aristotle says is the case), without doubt this will not happen in the lowest works of nature, but in the first and most excellent causes of all things, which, on account of their exuberant fecundity, have a power generative of all things, and, from their converting and rendering similar to themselves the natures which they have generated, are the paradigms or exemplars of all things. But as these divine causes act for their own sake, and on account of their own goodness, do they not exhibit the final cause? Since, therefore, intelligible forms are of this kind, and are the leaders of so much good to wholes, they give completion to the divine orders, though they largely subsist about the intelligible order contained in the artificer of the universe. But dianoëtic forms or ideas imitate the intellectual, which have a prior subsistence, render the order of soul similar to the intellectual order, and comprehend all things in a secondary degree.

These forms, beheld in celestial and divine souls, possess a fabricative power, but with us they are only gnostic, and no longer demiurgic, through the defluxion of our wings. For, as Plato says in the *Phædrus*, when the winged, that is, the intellectual, powers of the soul are perfect, and plumed for flight, the soul dwells on high, and in conjunction with divine natures governs the world. In the *Timæus*, he manifestly asserts that the Demiurgus implanted these dianoëtic forms in souls, in geometric, arithmetic, and harmonic proportions; but in his *Republic*, (in the section of a line) he calls them images of intelligibles; and on this account does not for the most part disdain to denominate them intellectual, as being the exemplars of sensible natures. In the *Phædo*, he says that these are the causes to us of reminiscence; because disciplines are nothing else than reminiscences of middle dianoëtic forms, from which the productive powers of nature being derived, and inspired, give birth to all the mundane phenomena.

What we have just now advanced, may be thus illustrated. In a divine soul subsisting in the heavens, the bisection of the greatest circles in a sphere presides with gnostic, energetic, and fabricative power, but in our souls it has only a gnostic subsistence. In the nature which is suspended from such a soul, the zodiac, the equinoctial, and the meridian, vitally bisect each other, and possess a fabricative power, but not a gnostic energy; a divine soul comprehending all these in its intellections in profound union, and with demiurgic energy, but a celestial body receiving divisibly those things only which are requisite to the perfection of its nature.

Hence,

nature; viz. without investigating whether they are ideas or not, and whether or not they are the principles and essences of things; alone attending to this, whether mathematical entities have any subsistence or not, and if they have, in what manner they subsist.

In the next place, we shall separately speculate concerning ideas themselves, and this simply, and in a small degree, for the sake of law*; for many things are divulged respecting them, even in exoteric discourses. Further still: it is requisite that greater attention should be paid to that part of our inquiry, in which we consider if the essences and principles of

Hence, also, demonstrations are produced by astronomers from universal and particular propositions; from universal, which indeed have a causal power, since they pre-exist in soul, which imparts essence to all mundane natures; and from particular propositions, which are derived from sensibles.

Of this threefold order of ideas, viz. those in divine souls, in our souls, and in nature, the Pythagoreans considered those which subsist in nature; and which are the inseparable causes of sensibles, as the last images of separate forms, on which account they did not disdain to call them by the same appellations. Lastly, by these, (which they called *συντάξιμα μοναδῶν*, or monads co-ordinated with sensibles) the soul which has descended into the realms of generation being roused and excited, proceeds to the reminiscence of middle or dianoëtic forms. She also reduces her own peculiar reasons to intellectual and first exemplars; and, in consequence of this, sight and hearing are advantageous to the philosopher, and contribute to the re-elevation of the soul.

These things being well understood, it will be found that Pythagoras and Plato, and their followers, did not differ from each other about the doctrine of ideas, as the reader might be induced to think they did from what Aristotle with apparent seriousness asserts. But the Pythagoreans, when they discoursed about those forms which have a middle subsistence, and also about those which are the first of things, gave them the same appellations with sensibles themselves, transferring these names by a certain similitude from the latter to the former.

Those ancient writers, however, says Syrianus, who have given an historical account of the doctrine of these philosophers respecting ideas, from not having by any means fathomed the depth of their meaning, have asserted that their attention was alone directed to inseparable forms. Some, again, have affirmed that they alone venerated a mathematical essence, since they have called first, middle, and last forms by mathematical names. And to others, still more perverse, some of these philosophers have appeared to confound intelligible with dianoëtic forms; when, at the same time, these mighty masters of wisdom have done nothing of this kind; but, in reality, a false suspicion has been engendered in the minds of their historians, through the communion of names with each other. But Plato, exhibiting in this respect his great philanthropy, has clearly distinguished by difference of appellation, intelligible from dianoëtic essence: and hence, the pretended objections of Aristotle in what follows are directed against Plato, as supposing that there are two orders of separate essences.

* That is, (as it appears to me) for the sake of order.

things

things are numbers and ideas: for, after ideas, this remains as the third consideration. But it is necessary, if there are such things as mathematical entities, that they should either be in sensibles, according to the assertions of some; or that they should be separated from sensibles, as is asserted by others: or, if neither of these is to be admitted, either they have no subsistence, or they subsist in some other way. So that the controversy with us will not be respecting their being, but their mode of subsistence.

C H A P. II.

* That it is impossible, therefore, that they should subsist in sensibles, and that the reasoning adduced in defence of this mode of subsistence is at the same

* "Neither any one of the Pythagoreans," says Syrianus, "nor Plato himself, nor any of his genuine followers, has placed geometrical figures and magnitudes in sensibles. But if Severus, or any of those who have attempted to explain the doctrines of Plato from the philosophy of Aristotle, have perverted the mathematical sciences, in applying them to the demonstration of natural causes, this is nothing to the ancients, whose opinions Aristotle now endeavours to confute." Perhaps, however, the objections of Aristotle are directed against such an hypothesis, in consequence of foreseeing that it would probably be adopted.

But, says Syrianus, because he again refers us to the doubts in the third book, we must say, in addition to what has there been asserted, that neither is it entirely impossible that two solids should be contained in the same space. Nor is it requisite in order to oppose the objections of Aristotle to regard the Stoics, who did not deny that material masses may permeate each other, but we should rather attend to those who, supposing *interval* (*διαστημα*) to permeate through the universe, and to receive into itself the whole of a corporeal nature, assert that it by no means divides, or is divided by the air, and is co-divided with other bodies; but that it is void of inclination and fixed; and, being exempt from all mutation, is extended through the universe, and brings with it place, receptacle, termination, circumscription, and other things of this kind, to the natures which give completion to the sensible world. These philosophers, therefore, regarding a body of this kind, do not indeed assert that it is mathematical, but similar to a mathematical body, so far as it is immaterial, immoveable, void of contact, liberated from contrariety, and purified from every passive quality.

Besides, they were also of opinion, that as mathematical body, through the energy of the dianoëtic part, is emitted as it were into the phantasy, (for when the dianoëtic part has an incorporeal conception of a sphere, for instance, the imagination also beholds at the same time the mathematical sphere, subsisting with immaterial bulk,) in like manner in the will, and in the intellection of the mundane soul, this spherical space in the universe receives a kindred subsistence: for the mundane soul, in consequence of looking to intellect, causes this space to be spherical, but, in consequence of surveying all forms, causes it to be the receptacle of all bodies, and to comprehend them in one; since the intellections of this soul are both continued and

transitive,

same time fictitious, has been evinced in the doubts in which we have shown the impossibility of two solids occupying the same place. Further still: by the same reasoning, it appears that other powers and natures are in sensibles, and that no one of them has a separate subsistence. These things, therefore, have been already discussed. But, besides this, it is evident that it would be impossible for any body to be divided: for it would be divided according to a superficies, and this according to a line, and a line according to a point. So that, if it is impossible to divide a point, it is also impossible to divide a line; and if a line, it is impossible to divide the rest. What is the difference, therefore, in admitting, either that there should be such natures, or that there should not be, but that such natures should be contained in sensibles? For the same thing will happen; for, sensibles being divided, they also will be

transitive, because the intelligible ideas which are the objects of its vision, have both an united and at the same time a distinct subsistence, although one nature comprehends them all. Hence the sensible universe, being replete with imitations of these, receives them attended with dimension and magnitude.

It appears, therefore, that the opinion of these philosophers is not impossible, nor yet of those who think that simple and immaterial bodies may permeate each other without division; but that two material bodies replete with contraries should occupy the same place, they say is in the highest degree impossible. They further add, that immaterial bodies are similar to the illuminations which are emitted from different lamps, which at the same time extend through the whole of the same house, and mutually pervade each other without confusion and division: for these illuminations are commensurate with bodies themselves, and are co-extended in three dimensions, and yet are not prevented from occupying the same place among themselves, and with other bodies. No other reason can be assigned for this, than the simplicity and immateriality of their nature, and their being impartibly divided. But as they are united to their principle, and are suspended from it, they are present when it shines, and, when it departs, they at the same time recede; and this the immaterial bodies, which are the vehicles of souls, are by no means prevented from accomplishing.

Aristotle, therefore, does not now oppose those who venerate a space of this kind, but those who introduce another order of bodies among sensibles; bodies which are solid in consequence of having triple dimensions, and mathematical, because they are perfectly immoveable; which hypothesis, says Syrianus, was not adopted by any one of the antient illustrious philosophers with whose writings we are acquainted. For the five regular figures, which are mentioned in the *Timæus* of Plato, and which are employed in the formation of the mundane elements, are indeed explained by mathematical names, but occultly signify certain active and demiurgic powers of nature. If any one, too, should say that the luminous vehicle also of our souls possesses triple dimensions, and is void of resistance, he would not on that account openly assert that it is a geometrical body. For how can that which is full of life and motion, and the most moveable of all things which belong to us, (with a motion I say allowed by Aristotle himself) be placed as immoveable among geometrical bodies?

divided,

divided, or they will not be sensibles. But neither can such like natures have a separate subsistence*: for if there should be other solids, besides such as are sensibles, separate from these, and prior to sensibles, it is evident that, besides superficies, there must necessarily be other superficies having a separate subsistence, and in like manner other lines and points: for this must follow from the same reasoning. And if this be admitted, again, besides the superficies, lines, and points of a mathematical solid, there will be others subsisting separately, since in-composites are prior to composites. And if bodies which are not sensible are prior to sensibles, for the same reason, those superficies which subsist by themselves will be prior to those which have their subsistence in immoveable solids: so that both these superficies and lines are different from those which have a co-subsistence in separate solids: for the latter subsist together with, but the former are prior to, mathematical solids. Again, therefore, of these superficies there will be lines, prior to which it will be requisite that there should be other lines and points, and other points prior to those contained in the lines which have a subsistence prior to sensibles; to which there will no longer be any that are prior. But this co-acervation is indeed absurd: for it will happen, that there is only one order of solids besides such as are sensible, but that there are two ranks of superficies besides sensibles; viz. those which are in the separate bodies, and

* Aristotle cannot be serious in what he now says; for it contains nothing demonstrative, nor does the deduction lead to an absurdity: for those ancients, whom he apparently confutes, considered points, lines, superficies, &c. as subsisting in the essential reasons of the soul, both in a divided and united manner. Nor is there any absurdity that a point, or rather the productive principle (*λογος*) of a point, should neither be mingled with line, superficies, &c. and yet should contribute to the production of these. For those divine men every where confirm and venerate the union and separation of incorporeal forms; and it is most clearly shown by the more ancient philosophers, (says Syrianus), that the same thing is both one and many in dianoëtic forms, and by a much greater priority in such as are intellectual. See what has been said on this subject in the notes to the third book.

But, if any one should be unwilling to grant that the reason or productive principle of dimensions in the soul has a manifold subsistence, it may be said to such a one, that it is not necessary there should be four points, or three lines, or two superficies; but that, as the letter *a* in a syllable, in a word, and in a sentence, is considered as one and the same in species, and has every where the same nature, in like manner a point, and a line, both considered by themselves, and with composites, preserve one and the same species. And further: that as the grammatical art knows the power of the letter *a*, both considered as existing separately, and as in a syllable and a word; in like manner the mathematical sciences, knowing those things which have a separate subsistence, know also those which subsist in conjunction with others.

those

those which have a subsistence separate from bodies; and again: that there are triple lines, viz. those which are in solids, those which are in superficies, and those which are separate; and, from the same reasoning, that there are quadruple points and quintuple monads*. So that, about which of these will the mathematical science be employed? For it cannot be employed about superficies, lines, and points, which are in an immoveable solid; since science is always conversant with things which have a priority of subsistence. The same reasoning also will take place respecting numbers: for besides points there will be other monads, and besides beings sensibles, and afterwards intelligibles; so that there will be infinite genera of mathematical numbers.

Further still: how will it be possible to solve the doubts† which we have

* The original in this sentence is corrupt, which I have corrected from the commentary of Syrianus.

† Since all universal forms are contained in divine souls, and also in our souls, prior to the partial comprehension of them by the corporeal nature of the world, it would be ridiculous to inquire in each of these where there will be another heaven, or another sun, or any thing else which contributes to the apparent mundane order. But because, says Syrianus, these things do not subsist once only, but as I may say infinitely, in beings, according to the assertions of the most antient theologists, Aristotle is not willing to pursue this inquiry, but notices as an absurdity, that there should be one heaven only above this sensible heaven. But he who, like the Coryphæus in the Theætetus of Plato is able to astronomize above the heavens (*ἔνθεν ὑπερῶν ὑπεραστρονόμουντες*), to view effects in their causes, and all beings subsisting intellectually, in the great exemplar of the universe,—such a one will perhaps be indignant with him who should neither assent to the doctrine of ideas, nor admit that the intellectual soul has forms in energy, but that it only contains them in capacity. How, therefore, will the demonstrations of astronomers any longer consist from things first and proper causes, unless they proceed from those universal reasons, which our souls contain gnostically only, but divine souls both gnostically, and possessing a fabricative power? For, if this be not admitted, it is impossible that astronomers, mathematicians, and natural philosophers, can demonstrate any thing, or that demonstrations should be the offspring of cause.

But those who admit that sensibles have a real existence, and that universals are merely things of posterior origin, subsisting in the soul by an abstraction from sensibles, forget that they make the soul more ignoble than matter. “For, as Proclus well observes, (see his Commentary on Euclid, lib. i. p. 3. of the original, or p. 56 of my translation) if matter derives from nature beings essential, and participating a high degree of entity and evidence; but the soul, by a posterior energy, receives these from sensible objects, and fashions in herself resemblances and images of posterior origin, contemplating vile essences, and abstracting from matter the forms inseparable from its nature; do not the authors of this hypothesis make the soul more obscure and indigent than matter itself? For matter is the receptacle of forms materialized, as the soul is

have already enumerated? For the particulars about which astronomy is conversant, are in a similar manner things different from sensibles, and this is also the case with the objects of geometric speculation. But how is it possible that heaven and the parts of it can subsist, or any thing which possesses motion? The like will take place in optics and harmonics*. For there will be voice and sound, besides such as are sensible and particular. So that it is evident there will both be other senses and other sensibles. But why these more than those? And if these, there will also be other animals, since there will be other senses. Besides, some things are exhibited† through

is of forms immaterialized. But in this case matter would be the place of primary beings, and the soul of such as are secondary and subordinate: matter and its forms obtaining the lead in being, and existing as the sources of the subsistence of immaterial forms."

* There is no absurdity in admitting that all these subsist in the reasons, i. e. in the productive principles, of the soul, and also that they subsist in images, which are resemblances of reasons, not only prior to sensibles, but even to those physical reasons by which sensibles are formed. These things being granted, Aristotle subjoins as a most absurd consequence, that there will also be other animals, since there will be other senses. But though Plato, in the *Timæus*, asserts that animal itself, or the extremity of the intelligible order comprehending in itself all intelligible animals, is both the cause of those animals which subsist in the order of soul, and of those which subsist in the sensible order; yet Aristotle feigns as if he had never heard of things of this kind; which is one considerable proof among many others, that he is not serious in his objections to Plato's doctrine of ideas.

It deserves also to be remarked, that Aristotle himself in the twelfth book of this work calls the first intellect an animal; and, in his *Nicomachean Ethics*, he asserts that man, properly considered, is intellect. If therefore intellect, which is our principal part, is the true man, since every man is an animal, it is evident that our intellect also is an animal. We contend, therefore, that there are other animals besides such as are sensible, but that they subsist in a different, and not in the same manner as sensibles. He, therefore, who calls the knowledge of such animals sense, and the objects of their knowledge sensibles, though these are the causes of sensibles, does nothing more than transfer to causes the names of their effects.

† The whole reasoning of Aristotle is as follows: If certain things are evinced by mathematicians and natural philosophers, through particular axioms, as, for instance, that if from equal things you take away equals the remainders are equal, and that, if four quantities are proportional, the rectangle under the extremes is equal to that under the means, and many other of this kind; it is necessary, since magnitudes and numbers have a separate subsistence, that the things signified by these axioms should also be separate, having a subsistence superior indeed to magnitudes and mathematical numbers, but inferior to ideas; or, in other words, they must be placed between essential and mathematical magnitude. This Aristotle objects to as impossible, in order apparently to destroy the separate subsistence of mathematical entities. It is however, in a certain respect true: for, of the reasons or productive principles contained in the soul, some are more simple,

through universal reasons by mathematicians, besides these essences. This, therefore, will be another separate essence, subsisting between ideas and things which have a middle subsistence, and which will neither be number nor points, neither magnitude nor time. But if this is impossible, it is evidently impossible that those natures can have a subsistence separate from sensibles. In short, the very contrary * to that which is usually apprehended will take place,

simple, universal, and comprehensive than others, and on this account are more proximate to intellect, and more manifest and known than particulars; but others are destitute of all these properties, and receive their completion from more antient principles, by which also they are contained. Is it not, therefore, necessary, since conceptions are then true when they accord with and are accommodated to things themselves, that if the axiom is true which affirms that, if from equals you take away equals, the remainders are equal, there should be some reason in which this is primarily inherent, and which is neither the reason of magnitude, nor number, nor time, but comprehends all these, and likewise other things in which this axiom is naturally inherent? At the same time, this reason is neither in place nor in sensibles: for, how can that which is universal, and most simple, and on this account indemonstrable, subsist in matter, which willingly (*αγαντεως*) receives the impressions of forms? Indeed, if we admit this, how can that assertion be any longer defended, that every demonstrative cause is primarily inherent in something, so as that it may be co-equal to it, and may be universal, as Aristotle in his Last Analytics asserts of universal?

Besides, on what account are axioms more manifest and known than particulars and things demonstrable, if we give subsistence to them by induction from things last, when prior to this they had no subsistence? After what manner, likewise, do all men agree in assenting to their truth, unless they had an essential pre-existence in our conceptions? For it is not necessary that we should be unanimous respecting things which we receive through the senses.

Again: how is that true which Aristotle openly admits, that intellect delivers the principles of demonstration to the soul, unless we essentially received them in our conceptions prior to the energies of sense? For intellect does not become ministrant to us in things of which the generation is subordinate. Either, therefore, we must reason in a circle, if we assume and give subsistence to axioms from particulars, but demonstrate particulars from axioms; or, since demonstrations are from things prior, as Aristotle proves in his Last Analytics, we must derive our more simple conceptions of axioms from intellect. But the variety of forms which the soul contains subsists in us from the composition of these. And these also again subsist according to intellect and from intellect. For whatever we essentially possess must be derived from intellect, since through more simple forms and reasons such as are more particular derive their subsistence. And by thus speaking we shall speak consistently, since we shall affirm that demonstrations are perfected from causes themselves.

* Those divine men are indeed neither discordant with respect to each other, nor to things themselves: for, neither did they conceive that the form of magnitude which is in intellect is imperfect, or the magnitude which is conjoined to this form in imagination, nor yet that it is inanimate. For how is this possible, since they are placed in soul? But, since demonstrations

place, if any one considers mathematical entities as certain separate natures. For it is necessary, if they subsist in this manner, that they should be prior to sensible magnitudes, when at the same time in reality they are posterior to them: for an imperfect magnitude is in generation prior, but in essence posterior; as, for instance, the inanimate to the animate. Further still: in what and when will these mathematical magnitudes be one*? For those
which

are from causes which have an essential subsistence, as Aristotle evinces in his *Last Analytics*, magnitudes also must have an essential subsistence in the soul, unless we are willing to admit that the unessential is the cause of essence. Since Aristotle likewise often affirms that universals are things prior by nature to particulars (because, if they no longer subsist, the subsistence of other things is destroyed, but though other things should perish, their subsistence would not be subverted), he cannot be serious in asserting that these again have their subsistence from sensibles.

If, indeed, we admit that universal is twofold, one the cause of a sensible thing, and the other of posterior origin, being nothing more than a general phantasm as it were derived from sensibles, we shall speak agreeably to Plato and all the Pythagoreans. We must also, in consequence of this, admit that there is a twofold magnitude, the one subsisting in the *dianoëtic* part, and at the same time accompanied with the imaginable form of magnitude; but the other obtained by a denudation of sensible magnitude. Nor shall we say, that geometry is conversant with denudated magnitude, since it does not possess indubitable certainty. To which we may add, that we have never seen so many multangles and superficieses, such a variety of multilateral figures, such divisions of angles, sides, or spaces, as geometry considers, and of which the reasons or productive principles of the soul are full, but matter is naturally unadapted to receive.

But the Pythagoreans and Platonists assert that geometry is conversant with imaginable forms, so far as these are suspended from the essential reasons of intellect, from which through a demonstrative cause they proceed. Or rather, that geometry wishes indeed to contemplate the impartible reasons of the soul; but since it cannot use intellects void of imagination, it extends itself to imaginable figures, and to magnitudes subsisting with dimension, and thus in these speculates those; in the same manner as, when imagination is not sufficient for this purpose, it even proceeds to external matter, in which it describes its theorems. Its principal intention, however, in this case is, not to apprehend the sensible form which has an external position, but that interior vital form in the mirror of imagination, which the inanimate exterior form imitates. After the same manner also, when geometry is conversant about the imaginable form, it is not employed about it as the principal object of its energy; but since, through the imbecility of its intellect, it is incapable of apprehending form divested of imagination, it directs its eye to the imaginable figure. As every imaginable form, therefore, ranks among particulars, but demonstration is directed to that which is universal, the principal employment of geometry is not about imaginable form, but about that which is universal and immaterial.

* Again Aristotle recurs to his former reasoning, in which he inquired how mathematical entities are both more imperfect than and prior to sensibles. But he here inquires what the cause is by which mathematical magnitudes are united. For, to sensibles, nature, or material form,

which are here either reside in the soul, or in a part of the soul, or in something which participates of reason. But, if this is not the case, they will be many, and will be dissolved. However, as those are divisible and quantities, what is the cause of their being one, and subsisting in conjunction? Further still: this is evinced by generations*. For that which pertains to length is first produced, afterwards that which pertains to breadth, and, lastly, that which pertains to depth; and thus the end is obtained. If, therefore, that which is posterior in generation is prior in essence, body will be prior both to superficies and length; and thus will be perfect and more a whole, because it is animated. But how will a line or superficies be animated? For this will be an axiom above the reach of our senses.

Again: body indeed is a certain essence†; for it already possesses in a certain respect the perfect. But how can lines be said to be essences? For they are not essences, in the same manner as a certain species and form, as if a thing of this kind were soul; nor are they essences after the same manner as

form, is the cement or bond: but what is the bond to mathematical entities? We reply, that the impartible reasons of magnitudes are better, since they subsist in profound union, than imaginable magnitudes, and, in consequence of depending on their impartible cause, are free from the dispersion with which interval is attended. And besides this, as they subsist in soul, they receive from it a far greater union than sensibles.

* As mathematical entities are without generation, the only thing that can be evinced by the present reasoning of Aristotle is this, that in sensibles body itself is essentially prior to, and more perfect than, superficies.

† Aristotle here apparently wishes to evince that lines and superficies are posterior to bodies. For if, says he, lines are essences, after what manner are they essences? As form, or as matter? But if they are not essences, they will be posterior to essences. We reply, therefore, that things void of dimension, such as reasons and forms, are essences; but, that things which subsist with dimension in the phantasy, are as the matter of right lines or circles. If any one indeed asserts that imaginable cause in the imagination subsists there as in a subject, he must necessarily admit that it is posterior to, and more imperfect than, its subject. But it does not follow, that it is posterior to sensible essence. For not every thing which is in a subject is posterior to every essence; since, if this were the case, the virtues of the soul and the sciences would be subordinate to stones and other material bodies. But it is universally true, that whatever essentially resides in a subject is posterior to that subject; at the same time that it is neither posterior to, nor more imperfect than, another thing which is of an inferior nature. Unless some one should have the hardness to assert that science and virtue are things subordinate to body. But, surely, soul and what belongs to soul are more excellent than body and all corporeal properties. And soul, indeed, surpasses those things that reside in it as a subject, whether they are in capacity or in energy; but body is more honorable than its accidents.

matter,

matter, as if a thing of this kind were body. For it does not appear that any thing is capable of subsisting either from superficies or points. But if it were a certain material essence, it might appear capable of suffering this. Mathematical natures, therefore, are prior in definition * to sensibles; yet it does not follow, that all such things as are prior in definition are also prior in essence. For, things prior in essence are such as, having a separate subsistence, transcend in being: but things prior in definition are those, the definitions of which are composed from definitions. These, however, do not subsist together: for, if passions do not subsist apart from essences, as, for instance, something moved, or something white, whiteness is prior to a white man, according to definition, but not according to essence; for it cannot have a separate subsistence, but always subsists together with the whole: but I mean by the whole, the white man. So that it is evident that neither is that prior which subsists by ablation, nor is that posterior which subsists from addition: for, by the addition of whiteness a man is denominated white. That mathematical natures, therefore, do not possess a greater degree of entity than bodies, and that they are not prior in essence, but only in definition, to sensibles; and also, that they cannot have a separate subsistence, has been sufficiently shown. Since, however, they cannot subsist in sensibles, it is evident that, either they altogether have no subsistence, or that they subsist after a certain manner, and on this account simply are not: for we speak of being multifariously.

* Aristotle here grants that mathematical entities are prior in definition to sensibles, since he who defines a sensible body requires the three dimensions which limit mathematical body; but he apparently denies that they are prior in essence. But, that he is not serious in what he says is evident from hence, that, according to the rules delivered by him in the seventh book of this work, in simple essences (viz. essences which are considered without accidents), that which is prior in definition is also demonstrated to be prior in essence. For he there says that things which are prior in definition are also prior in species; but things prior in species are prior in essence; and consequently things prior in definition are prior in essence. Mathematical entities, therefore, are, according to Aristotle, prior to sensibles both in definition and essence. Indeed, he who rightly considers the dimensions about which geometry is employed, will find them to be in all things prior to a material body, if it be universally acknowledged that immaterial natures are prior to material, universals to particulars, and things eternal to such as are corruptible.

CHAP.

C H A P. III.

As universals in the mathematics are not conversant with any other separated natures than magnitudes and numbers, but are employed about these, though not so far as they are such things as possess magnitude, or are divisible, it is evident that definitions also and demonstrations take place about sensible magnitudes, but not so far as they are sensibles *, but so far as they are considered universally. For, as there are many reasons of things in motion,

* We have already shown, that mathematical entities do not subsist by a denudation from sensibles. We shall now observe, in reply to what Aristotle says respecting the non-existence of motion separate from sensibles, that the arguments concerning motion are not similar to those concerning figures. For he who is not willing to admit the existence of motion separate from sensibles, does not understand a motion more certain than that which is in moveable entities; but geometry understands things more certain than sensible figures. In short, we may say, in answer to the whole of his reasoning, that we neither behold all the figures nor all the numbers contained in sensibles, nor is it possible for things derived from sensibles to possess mathematical accuracy and certainty. But if it should be said, that we add what is wanting, and make the things abstracted from sensibles more certain, and after this manner consider them; in the first place, indeed, it is requisite to say whence we derive the power of thus giving them perfection. For we shall not find any more true cause than that assigned by the ancients; I mean, that the soul, prior to the energies of sense, essentially contains the reasons of all things. But in the next place, by adding something to the things abstracted from sensibles, we do not make them more certain and true, but, on the contrary, more fictitious. For, if any one blames the person of Socrates, while he accurately preserves in his imagination the image which he has received from the sensible Socrates, he will have an accurate knowledge of his person; but if he wishes to transform it into a more elegant figure, he will rather consider the transformed figure than the form of Socrates. But nothing of this kind takes place in equal and similar numbers and figures; but by how much the nearer we bring them to the more certain and perfect, they become by so much the more manifest and known, in consequence of approaching so much the nearer to their own impartible form. We may say, indeed, that we are excited to the perception of mathematical truths by sensible objects; but it must by no means be admitted that they derive their subsistence by an abstraction from sensibles. For the forms, indeed, which are transmitted to us through the senses, may proceed as far as to the imagination, in which they wish to retain an individual subsistence, and to continue such as they entered. When intellect, however, afterwards passes beyond these to universal, and to things which are apprehended by scientific reasoning, it plainly evinces that it considers objects allied to itself, and which, indeed, are its legitimate progeny. Hence, this energy is emulous of divine energy and not laborious, and has a power of exciting, purifying, and enlightening the dianoëtic eye of the soul, which is blinded and buried by studies of a different kind. But how could this be effected, if it were employed about things which alone subsist by a denudation from sensibles? The contrary to this, indeed, would rather be effected; the splendid eye of intellect would be darkened and fixed

tion, so far as they are in motion only, without considering what the nature is of each, or what the accidents which belong to them; and yet it is not necessary on this account, that there should be any thing in motion separated from sensibles, or that in things in motion there should be any separated nature; in like manner there will be reasons and sciences about things which are moved, yet not so far as they are moved, but so far as they are bodies only; and again, so far as they are superficies only, and so far as they are lengths only, and so far as they are divisible; likewise so far as being indivisible they have position, and so far as they are indivisible only. So that, since it is simply true to say that there are not only things separable, but also things not separable, such as things in motion, and such as are mathematical: (since it is simply true to assert that these are such things as they are said to be,) and as, with respect to other sciences, it is simply true to say that they are conversant with this definite particular, and not with that which is accidental; as, for instance, with that which is white, if that which is salubrious should be white, but yet so far as it is salubrious; they are not conversant, I say, with that which is accidental, but with that to which each particular belongs—if salubrious with the salubrious, if with man so far as he is man. In like manner with respect to geometry, it does not follow that, though the objects with which it is conversant are sensible, and though it is not conversant with them so far as they are sensible—it does not follow, I say, though this be admitted, that the mathematical sciences do not depend on sensibles, or that they are employed about other separate natures. But there are many essential accidents to things, so far as each has its peculiar characteristic; since, so

fixed in body, and its native tendency to true beings restrained, by being busily employed, as in the perception of shadows, about things of posterior origin, dark imitations of reality, and more vile than matter itself.

In short, one of these two things must follow: either that mathematical demonstrations are less certain than physical reasons, or that the mathematical sciences are conversant with things which possess more reality than physics. For it is not reasonable to suppose that things which have more of reality should be more obscurely known, nor that things which are less real should be more manifestly known. But whenever this happens in the speculation of any intelligible essence, it is the consequence of our imbecility, and does not arise from the thing itself: for the assertion of Plato in this respect is most true, that every thing participates of splendor and knowledge, in proportion as it participates of truth and being. The same thing also is manifestly asserted by Aristotle in the second book of this work; for he there expressly says, "*As is the being of every thing, such also is its truth.*" So that it clearly follows, from Aristotle himself, that sensible objects have less reality than mathematical entities.

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far as an animal is feminine, and so far as it is masculine, these are its peculiar passions; although there is not any thing feminine nor any thing masculine separate from animals. So that, so far as geometry considers lengths alone, and superficies alone, and by how much the more it is employed about things which are prior in definition and more simple, by so much the more will it possess the accurate and the certain: but the accurate is that which is simple. Hence, geometry rather speculates things without magnitude, than according to magnitude, and in a particular manner it speculates things without motion. But if it contemplates motion, it especially contemplates that motion which is first; for this is most simple and regular. The same reasoning will also take place respecting the harmonic* and optic science: for neither speculates so far as sight or so far as sound, but so far as the objects of speculation are lines and numbers; for these are the proper passions of those. And in a similar manner with respect to the mechanic science. So that, if any one, abstracting from accidents, considers any thing respecting these sciences so far as they are such, he will not through this be in the smallest degree deceived†, as neither when he describes any thing in the earth‡, and calls that pedal

* The optician does not speculate the form of sight, or the musician the form of voice; but the former directs his attention to the rays of light, and the latter to numbers which have a relation to each other; these being the essential properties of sight and sound. The truth is, however, that optics makes the rays emitted to sensible objects from the luminous spirit or vehicle of our soul, similar to the lines which subsist in the phantasy, and the same luminous spirit. Hence, also, Aristotle somewhere observes that optics uses physical; as if they were mathematical lines, thus properly referring images to their proximate exemplars; since it is not possible to know an assimilated thing, except by its relation to a paradigmatic cause. The musician also refers numbers which are contained in a subject, and which subsist in other things, to separate numbers, which are both productive of them and are their exemplars, and whence they can alone participate of certainty. After the same manner, the mechanic also, in giving shape to matter, refers the whole of his operation to immaterial figures, which subsist in the phantasy with dimension, and impartibility in intellect. For all these disciplines, though they recur to matter, and are inclined to things exterior, yet as they operate under the pure mathematical sciences, they are referred to them, and use the theorems of these sciences.

† The true reason why this takes place is, because he who abstracts from accidents passes from conjoined to unconjoined figure, and from the partial and material to the universal and immaterial, in which both a variety of reasons, and multitude of theorems, present themselves to the view.

‡ This is not similar to the instance just before adduced; for the quantity of the thing described is not assumed in the proposition. But demonstration makes mention of, and is composed from, universals. So that the mathematician principally discourses concerning these, and not of the things which are in sensible figures, or magnitudes.

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which is not pedal: for there is nothing false in the propositions. But each particular will thus be contemplated in the best * manner, if any one considers that as separate, which has not a separate subsistence, as the arithmetician † does, and also the geometrician: for man is one and indivisible so far as man. But the arithmetician establishes an indivisible one; and afterwards considers, whether any thing happens to man so far as he is indivisible. On the other hand, the geometrician considers man neither as man, nor as indivisible, but as solid. So that on this account geometricians speak with rectitude, and discourse about beings: for being is twofold; one kind subsisting in energy, and the other materially. But since the good is different from the beautiful ‡ (for the one is always conversant with practical affairs, but

* This is perfectly true. For that which is in a subject, and has not one separable cause, will be known in the best manner, in its subject: as the form of Socrates will be more known and manifest in the body of Socrates than when by abstraction it is considered separate. And because this happens to be the case with every thing which subsists in common in bodies, or, in other words, with universal, considered according to its ultimate participation, the intellection of this, when it is separated, can for no other reason be the best, than because we essentially contain the forms of all things, (the soul being as it were an omniform image, *παιμορφον αγαλμα*), which revolving and unfolding by a dianoëtic energy, we produce every species of science.

† It may here be asked, What is that which leads figure and magnitude from capacity into energy? For certainly the geometrician, by preserving capacity, does not understand these in capacity, but he then understands them when he has brought them into energy. But, if this be the case, he gives form to them, makes them more certain, and perfects them. How, therefore, could he accomplish this, unless he possessed in himself things in energy? Hence, Aristotle says, that by that alone which is energy that which is in capacity is perfected, and led into energy. Besides, neither can the geometrician entirely derive the objects of his speculation from sensibles: for he contemplates many figures, and positions of figures, which the sensible world does not receive. And, in the next place, if these things subsist in energy in sensibles, but are considered separate from sensibles in capacity, how is that which is in capacity more certain than that which is in energy?

‡ In addition to what has here been well said by Aristotle, against Aristippus, we may ask whence mathematical entities derive the good, the commensurate, and the finite? For intelligibles are better than this division and evolution of reasons. It remains, therefore, that they must possess a middle nature between intelligible and material forms; so that they will be more divided and multiplied than intelligibles, but more united than sensibles. They will also be orderly disposed and measured by certain universal reasons, and immaterial forms, which perpetually endure in a becoming manner, and proximately preside over sensibles. But, above all, it may be confidently asserted, that the mathematical sciences can only have been treated with contempt, from not considering their objects as having a separate subsistence. For in things void of essence, of posterior origin, and which are the similitudes of sensibles, what can there be which

but the beautiful is also in immoveable natures), those who say that the mathematical sciences assert nothing respecting the beautiful or the good, speak falsely: for they speak about these, and especially render them manifest. For though they do not employ these names, yet when they exhibit the operations and reasons of these, do they not speak concerning them? Indeed, the greatest species of the beautiful are *order*, *symmetry*, and *the definite*, which the mathematical sciences especially evince. And since these appear to be the causes of many things, (I mean, for instance, order and the definite) it is evident that they speak of such a cause as is after a certain manner beautiful. But about these we shall elsewhere speak more perspicuously. Concerning mathematical* natures, therefore, that they are beings,

which depends on good or order? since, thus subsisting by a denudation from sensibles, they will be full of obscurity, nothingness, and ignorance. They will possess no good, nothing of order, nothing adorned with the splendors of bound. For ultimate good, the most obscure gradation, and the last boundaries are to be found in sensibles. So that, any nature posterior to that which is sensible (and such is that which subsists by abstraction from sensibles) must necessarily be unadorned, inordinate, infinite, and non-essential. But, if the mathematical sciences are the receptacles of beauty, of a fair variety of propositions and theorems, and of an admirable order, their objects must be better than sensibles, and must as far transcend them, as that which subsists perpetually the same, surpasses that which subsists differently at different times.

* He who reads and understands the admirable work of Jamblichus *Περὶ τῆς κοινῆς μαθηματικῆς ἐπιστήμης*, i. e. *On the common Mathematical Science*, published by Villoison in his *Anecdota Græca*, will clearly perceive the essence, power, and energies, of the whole of the mathematical science; what the common speculation of it is, and to what genera it is extended; what the principles are of the mathematical sciences, and in what they differ from other principles; what the nature is of the principles of other essences, and how principles of this kind impart a common cause to all the mathematical sciences. He will likewise know what the principles are of each of these sciences, as of numbers, figures, harmonies; how they accord, and in what they differ from each other; what the best use is of the study of the mathematics, and to what end the best treatise concerning them ought to be referred; what that is, which is subjected to each of these sciences, as the proper object of scientific knowledge; what the common judicial instrument is of all the mathematical sciences, and how this is discovered by the section of a line, delivered by Archytas, and by Plato in his Republic; whether the essence of these disciplines is first terminated in soul, or prior to soul, because soul is self-motive, but these are immoveable. He will also learn that the soul principally consists from mathematical reasons, as Plato, and, prior to Plato, the Pythagoric Timæus demonstrates; and will know what the employment is of mathematical speculation, and how it is acquired; and that these sciences were properly denominated mathematical, as producing in us a reminiscence of separate incorporeal forms. He will likewise perceive what the powers are of the mathematical science, their orders with relation to each other, the differences by which they are divided, and in how many ways they are understood;

beings, and how far they are beings, how they are not in one respect prior to sensibles, and yet how in another they are prior, thus much has been said by us.

CHAP. IV.

WITH respect to ideas*, in the first place that opinion concerning idea is to be considered, which does not in the least associate it with the nature of numbers, but is that which was adopted from the beginning by those who

understood; what the genera and objects are of this science, and how they differ from intelligible essences; what the similitude and dissimilitude are of the mathematical science, and how far they are extended; and in what they differ from intelligible and sensible similitudes and dissimilitudes; how the knowledge of these sciences pervades through the whole of philosophy, and how many advantages they confer on theoretic and practical sciences; what are the modes peculiar to the Pythagoreans in treating on these sciences, and how they employed them; what the Pythagoric division is of the whole of the mathematical science into genera, and most proper species; what the definitive method is of this science, how it is effected, and what utility it confers on science; what the demonstrative method is, and whether it derives this from itself, or elsewhere.

All this, and still more than this, the reader may learn from this invaluable work; and, if together with this he has experimentally learned, in the language of the divine Plato, that the soul, through these disciplines, has an organ purified and enlightened, which is blinded and buried by studies of another kind, an organ better worth saving than ten thousand eyes, since truth becomes visible through this alone,—if he has learned this, he will indeed be fearful of drawing down to an unessential subject a species of speculation so beautiful and varied with scientific and intellectual reasons, and so calculated to lead us back to the true purity and perfection of our nature.

* The Pythagoreans and Plato did not denominate idea from one thing, and ideal number from another. But since the assertion is eminently true, that all things are similar to number, it is evident that number, and especially every ideal number, was denominated on account of its paradigmatic peculiarity. If any one, however, wishes to apprehend this from the appellation itself, it is easy to infer that *idea* was so called, from rendering as it were its participants similar to itself, and imparting to them *form, order, beauty, and unity*; and this in consequence of always preserving the same form, expanding its own power to the infinity of particulars, and investing with the same species its eternal participants. *Number* also, since it imparts proportion and elegant arrangement to all things, was allotted this appellation: for the ancients, says Syrianus, call to adapt or compose, *αρσαι αρσαι*, whence is derived *αριθμος arithmos number*. Hence *αναρμοιον anarmon*, among the Greeks signifies *incomposite*. Hence too, (he adds) those Grecian sayings, *you will adapt the balance, they placed number together with them*, (*αριθμον εθετο μετα οριων*), and also *number and friendship*. From all which, number was called by the Greeks *arithmos*, as that which measures and orderly arranges all things, and unites them in amicable league.

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first asserted the existence of ideas. But the opinion * respecting forms was entertained by the advocates for their subsistence, in consequence of their being persuaded of the truth of the Heraclitæan arguments, that all sensible things are in a perpetual flux; so that, if any thing is the object of science and

* The followers, however, of Socrates and Plato did not perfectly accord with Heraclitus in their dogmas respecting a sensible nature, as is evident from the Theætetus and Cratylus of Plato; nor did they, from the ever-flowing nature of these, arrive at a knowledge of the determinate causes of beings. But that there is no science of things in a continual flux, was not only the opinion of Plato, Socrates, and the Pythagoreans, but also of Aristotle. Nor is there any science of particulars, whether they flow in toto, according to Heraclitus; or are perpetually generated and corrupted, but are permanent, collectively considered, or according to the whole of themselves, through an ideal cause, according to Plato; or are the only things that have a subsistence, according to the Stoics: for all philosophers deny that there is any science of individuals, unless we are willing to call sensation science, which will not be attempted by any one who is in the least skilled in the mathematical disciplines.

But, omitting the further consideration of these things for the present, it must by no means be granted, as the words of Aristotle seemingly imply, that Socrates arrived at universals for the sake of definitions, and that he considered these as inseparable from particulars, but that Plato and Socrates, either being ignorant of or passing by the use of universals, ascribed to them an abstract essence. For neither did Socrates consider things definable as the only universals, but, prior to these, he established those reasons or principles productive of science which essentially reside in the soul, as Plato shows in the Phædrus and Phædo. In the tenth book of the Republic, too, he introduces Socrates as venerating those separate forms which subsist in a divine intellect; and in the Phædrus, as asserting that souls, elevated to the supercelestial place, behold justice itself, temperance itself, and, besides these, science itself; and lastly, in the Phædo, evincing the immortality of the soul, from the hypothesis of separate forms. For how, as Syrianus justly observes, is it possible that Plato should not have delivered to us the genuine doctrine of Socrates, since he was the most just of all men, and the most worthy to be believed?

Syrianus further observes, that this doctrine was not derived from Socrates, but had a higher origin, from Pythagoras, and the leaders of the Eleatic sect. For Timæus, who was a Pythagorean, ascribes the generation of the universe to separate forms, and asserts both that they are, and that they are the causes of sensibles; and Parmenides says, "that he who does not permit the idea of every thing which exists to be always the same, will entirely destroy the discursive power of the soul."

Syrianus then proceeds to show, in defence of Socrates, Plato, the Parmenidæans and Pythagoreans, that ideas were not introduced by these divine men, according to the usual meaning of names, as was the opinion of Chrysippus, Archædemus, and many of the junior Stoics; for ideas are distinguished by many differences, from things which are denominated from custom. Nor do they subsist together with intellect, in the same manner as those slender conceptions, which are commonly called abstract ideas, or universals abstracted from sensibles, which was the hypothesis of Longinus: for, if that which subsists is unsubstantial, it cannot be consubstantial with intellect. Nor are ideas according to these men *notions*, as Cleanthes afterwards asserted

and intellectual prudence, there must necessarily be certain other permanent natures besides sensibles; for there is no science of things flowing. But Socrates, employing himself about moral virtues, first of all explored the manner of defining respecting these: for Democritus touched only upon
physics

asserted them to be. Nor is idea, definitive reason, nor material form, and the object of definition, as here and elsewhere Aristotle pretends it is, according to Socrates; for these indeed subsist in composition and division, and verge to generation and matter. But ideas are perfect, simple, immaterial and impartible natures. And what wonder is there, says Syrianus, if we should separate things which are so much distant from each other? Since neither do we imitate in this particular those Platonists, Plutarch, Atticus, and Democritus, who, because universal reasons perpetually subsist in the essence of the soul, were of opinion that these reasons are ideas: for though they separate them from the universals in sensible natures, yet it is not proper to conjoin in one and the same, the reasons of soul, and an intellect such as ours which is called material, with paradigmatic and immaterial forms, and demiurgic intellects. But, as the divine Plato says, it is the province of our soul to collect things into one by a reasoning process, and to possess a reminiscence of those transcendent spectacles which we once beheld, when governing the universe in conjunction with Divinity. Boethus the Peripatetic too, with whom it is proper to join Cornutus, thought that ideas were the same with the universals in sensible natures. However, whether these universals are prior to particulars, they are not prior in such a manner as to be denudated from the habitude which they possess with respect to them, nor do they subsist as the causes of particulars; both which are the prerogatives of ideas: or whether they are posterior to particulars, as many are accustomed to call them, how can things of posterior origin, which have no essential subsistence, but are nothing more than slender conceptions, sustain the dignity of demiurgic ideas?

In what manner, then, do ideas subsist according to the contemplative lovers of truth? We reply, Intelligibly and tetradically (*νοητως και τετραδικως*) in *animal* itself (*εν τῷ αὐτοζῳ*) or the extremity of the intelligible order*; but intellectually and decadically (*νοητως και δεκαδικως*) in the intellect of the artificer of the universe: for, according to the Pythagoric hymn, "Divine number proceeds from the retreats of the undecaying monad, till it arrives at the divine tetrad which produced the mother of all things, the universal recipient, venerable, circularly investing all things with bound, immoveable and unwearied, and which is denominated the sacred decad, both by the immortal gods and earth-born men."

προεσι γὰρ ὁ θεῖος ἀριθμὸς, ὡς φησὶν ὁ Πυθαγόρειος εἰς αὐτὸν ὕμνος,

Μονάδος ἐκ κενθμῶνος ἀκράτου ἐστ', ἀνίκηται
Τετραδάς ἐπὶ ζαθεῖν, ἥ δὴ τέκε μητέρα πάντων,
Πανδέχεια, πρὸς βίαν, ὅρον περὶ πάσι τίθεισαν,
Ἀτροπον, ἀκαμάτον, δεκάδα κλείουσι μὴν ἅγνην
Ἀθάνατοι τε θεοὶ καὶ γηγενεῖς ἀνθρώποι †.

* For an account of this order, see my Introductions to the *Timæus* and *Farmenides* of Plato.

† Proclus in *Tim.* p. 269. But the last line is from Syrianus.

And

physics in a small degree, and defined how the hot and the cold subsist: but the Pythagoreans prior to him invented definitions respecting a certain few particulars, the reasons of which they referred to numbers; as, for instance, what *opportunity* is, what the *just*, or what *marriage* is. Socrates, indeed, rationally inquired after *the what*: for he sought how to syllogise; but the principle of syllogisms is *the what*. For dialectic strength did not then exist; so that they were able without the possession of *the what*, to consider contraries, and whether there is the same science of contraries: for there are two things which may be justly attributed to Socrates, inductive arguments, and the definition of universal: for both these subsist about the principle of science. But Socrates did not consider universals and definitions as things which have a separate subsistence; but others separated them, and denominated things of this kind the ideas of beings. So that, for the same reason, it nearly happened to them that there are ideas* of all things which are

And such is the manner of their subsistence according to Orpheus and Pythagoras. Or, if it be requisite to speak in more familiar language, an intellect sufficient to itself, and which is a most perfect cause, presides over the wholes of the universe, and through these governs all its parts; but at the same time that it fabricates all mundane natures, and benefits them by its providential energies, it preserves its own most divine and immaculate purity; and while it illuminates all things, is not mingled with the natures which it illuminates. This intellect, therefore, comprehending in the depths of its essence an ideal world, replete with all various forms, excludes privation of cause, and casual subsistence, from its energy. But as it imparts every good and all possible beauty to its fabrications, it converts the universe to itself, and renders it similar to its own omniform nature. Its energy, too, is such as its intellection; but it understands all things, since it is most perfect. Hence, there is not any thing which ranks among true beings, that is not comprehended in the essence of intellect; but it always establishes in itself ideas which are not different from itself and its essence, but give completion to it, and introduce to the whole of things a cause, which is at the same time productive, paradigmatic, and final: for it energises as intellect; and the ideas which it contains are paradigmatic, as being forms; and they energise from themselves, and according to their own exuberant goodness. And such are the dogmas which he who truly opposes the advocates for the doctrine of ideas ought to confute; but which Aristotle does not anywhere attempt to contradict.

* From the Platonic theory of ideas, it follows, that though these lucid beings are universals, yet there are not ideas of all universal conceptions of the mind: "for, in the first place, says Syrianus, there are no ideas of things evil and base, because these subsist in nature rather by a privation and absence of ideas. And on this account they are said to exist contrary to nature. Nor secondly, of negations, for these are destructive of the bound and limitation, which are attributed to every thing from the unifying and comprehending nature of ideas; and hence, separation is rather the result of material infinity, than of that which is formal or ideal. Nor, again, are there any ideas

are predicated universally: and this is just as if some one wishing to enumerate*, should be of opinion that when there are fewer things he cannot, but when he has made more he will be able to enumerate: for, as I may say, forms are more in number than sensible particulars, from an inquiry into

ideas of things which at different times receive a variety of conditions: for these participate of transmutation from a moveable cause, but not from the immoveable and stable illustration of ideas. Further still: there are no ideas of parts, such as the hand, head, fingers, and the like: for the causes of things existing entire, produce whole species and forms, and are not divided about the parts of these, like the reasons of nature.

"But neither did these wise men place in intellect the determinate causes of accidents in bodies, such as sweetness and whiteness: for they considered that natural reasons were sufficient for the production of accidents. Nor again, of composites, as of a wise man. For, since ideas are simple, they preside over the simple essence of every thing. But the composition and division of things is the business of our intellect; ideas at the same time, and that intellection which is co-ordinate to ideas, being exempt from all these, on account of transcendent simplicity. Neither, therefore, must we establish ideas of things generated from dissimilars, such as mules; nor of fruit produced by ingrafting from different trees: for all these have a posterior and adventitious generation, and are not the work of nature alone, nor of nature proceeding according to her own reasons, but, as it were, compelled to labour contrary to her own determinations. Hence, it is manifest that all art which imitates nature, and alone ministers to the use of the mortal life, is separated from ideal cause. But neither are the works which, depending on the purpose of the soul, are perfected by a concurrence of many causes, and which we are accustomed to call the operations of fortune, to be conjoined with an ideal cause. For things which are there perfected are eternal, and subsist perpetually the same, free from the nature of contingent events. It remains, therefore, that ideas must be confined to universal and perfect essences, and to whatever confers to their natural subsistence; as for instance, to man, and every thing perfective of man, such as wisdom and virtue: for, as ideas are the generative and energetic causes of the perfection of every thing, they distribute being and perfection to essences, and convert them to the inexhaustible plenitude of their own omniform natures."

* That Aristotle is not serious in this place is evident; for what he first says is a mere cavil, and not a confutation; and, in the next place, he considers the Platonists as attributing ideas to accidents. This, however, is false: for, according to the more accurate of the ancient Platonists, there are no ideas of particulars, nor of the accidents to bodies. In reply to the cavil we may say, that it is not possible to number horses, without employing monadic number, (that is, number composed from units), and which is different from the number of things numerable; number in this latter case, being consubstant with the numerated natures. But, in short, if we do not direct our attention to material causes, but to such as are first-operative, and separate from their effects, it is necessary to pass to the contemplation of other natures, which, filling all things in an eternal time, with an immoveable energy, and from their very essence, with beauty and order, comprehend the causes of things generated in themselves; these causes being fewer in number than mundane natures from their proximity to

the

in to the causes of which, these men proceeded from sensibles to ideas : for ideas are homonymous with sensible particulars, and besides essences* they are inherent in many other things, both in sensibles and things eternal.

Further still : it does not appear from any one of these, according to what modes † the subsistence of forms is evinced : for from some, it is not necessary

the one, but possessing an ineffable power which comprehends the infinitude of the whole of time, and the things generated in it, through a transcendence of nature which is exempt from, and unco-ordinated with, the sensible universe.

* As there are many problems respecting ideas, there are four of principal importance ; viz. if there are ideas ; what are the things of which there are ideas ; what are their participants, whether generated natures alone, or also such as are eternal, and whether all, or only some things eternal ; and, in the fourth place, in what manner ideas are participated. The present reasoning of Aristotle, therefore, seems to relate to the third of these problems, viz. whether the defenders of these lucid beings admitted that there is any form or idea common to things generated and eternal, as, for instance, the idea of similitude, or equality, or identity, which both the heavens and the realms of generation participate. There is indeed no absurdity in admitting this : for though it is the same thing which is participated, yet the mode of participation is different ; since every thing participates principal causes, in a manner adapted to its rank in the order of things. But, lest any perturbation (says Syrianus) should be occasioned by arguments of this kind, let us consider what were the opinions of the best of the Platonists respecting the participants of ideas. Numerius, then, Cronius and Amelius considered all intelligible and sensible natures as participating ideas ; but Porphyry confined this participation to sensibles alone, and asserted that the first and best of intelligibles were the things which were participated, but that the natures thence originating, viz. the order belonging to souls, and the sensible universe, were the participants of ideas. And indeed there is no absurdity in admitting that the ideas of sameness, equal, and similar, are after one manner participated by soul, and after another manner by nature ; in one way by the heavens, and in another by the realms of generation ; and that of these there are indeed alliances, sympathies, and peculiarities in the participation of one idea ; notwithstanding which, the posterior always depend on the prior. After this manner, indeed, idea, by no means departing from itself, may be conceived to be impartibly present to all its participants. It will also follow that participants are adorned by things prior to themselves, and led back to idea itself ; body through nature ; this through soul ; and this again through its own intellect, which subsists in unproceeding union with divine forms, and is therefore conjoined with them better than things which subsist according to the idioms of their participants.

† There are many ways by which the existence of ideas may be proved. At present it may suffice to relate one of them ; for we propose, on account of its importance, to consider this subject very fully in the additional notes which will be annexed to this work. He who fabricated the universe is a god. Every god produces by his very essence ; in the same manner as fire burns, and snow refrigerates. Every thing which produces from its very essence, produce

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sary that syllogism should take place; but from others, even of things of which they do not think there are forms, forms arise. For, according to the reasons originating from the sciences *, there will be forms of all things of which there are sciences; and, according to the one in the many, there will also be forms of negations †: but, from our understanding something of that which is corrupted, there will be forms of things corruptible ‡; for there is a certain

duces an image of itself. He, therefore, who fabricated the universe made the world an image of himself. If this be the case, he contains in himself paradigmatically the causes of the universe: but these are ideas.

Nor is that argument in favor of their subsistence to be despised, which considers the perfect as prior to the imperfect, unity to multitude, the impartible to the partible, and that which always subsists after the same manner to that which has a mutable essence. In which the patrons of ideas show, that things do not begin from degraded natures, but that they end in these. But they begin from things the most perfect, the best, and the most beautiful. For it would be absurd to suppose that we can form conceptions of the equal and the similar, and every thing of this kind, considered according to their principal subsistence, but that the intellect of the artificer of the universe should not contain in himself the equal itself, the just itself, the beautiful, and the good, and every thing else of a similar nature.

* This also was said by the Pythagoreans and Platonists. If sciences are conversant with beings, they are universals; for sciences are of things universal; so that the syllogism will be in the third figure. The objects of science are universals; the objects of science are beings; therefore some universals are beings. For this is not true of all universals; not indeed of universals of posterior origin, viz. which are abstracted from sensibles, nor of those which are in individuals. But there is no absurdity in admitting that all objects of science are beings, if objects which are properly scientific are assumed, but not the medicinal or the mechanical. For these are not properly sciences; but those alone deserve to be so denominated, which are employed about things eternal, self-subsistent, and perpetually the same.

† That they placed unity before multitude is evident; but they considered this unity or monad as essential and generative of multitude, and not that which is peculiar to privation. For this is posterior, and the soul perceiving the common privation of men, produces in herself non-man, or the conception of that which is not man. But we must not suppose, that, as there is a certain ideal and terminated cause in the universe, through which all the different species of animals derive their perfection, so there is some cause which makes all these privations or non-men to subsist. For those natures which have a principal subsistence in things, must not be supposed to depend from one and the same cause with those which are only considered in them through a slender conception of the soul.

‡ The things which true intellect reaches by its projecting energy (*νοερα ισχυον*) are real beings: for the intellections of true intellect cannot be deprived of essence. But Aristotle, as it appears to me, drawing down intellect to imagination, for the purpose of concealment (for in other places he calls imagination passive intellect), says, there will thus also be an essence of things corrupted: for any one may imagine that which is corrupted. By this, therefore, we see, that those who oppose ideas are compelled to descend from beings to privations, and from
intellect.

certain phantasm of these. Again, with respect to the most accurate arguments of the advocates for ideas, some establish ideas of things relative*, of which we do not say there is an essential genus; but others introduce a third man. And, in short, the assertions respecting forms subvert the very things the existence of which the advocates for forms are more willing to admit than that of ideas themselves. For it happens that the duad† is not first, but number;

intellect which is in energy to imagination and opinion. For we can imagine and form an opinion of non-entity; but it is not possible to apprehend it by intellectual energy, or know it scientifically.

* We do not say that there are ideas of unessential habitudes, nor of things in motion, nor of those things which are perfected according to some unnatural position, whether upwards or downwards, to the right or left hand, or other things of this kind. But such things as become relatives through the participation of any idea, as similars, equals, or things different, participate of these, indeed, with a certain genus of being, but others receive among themselves one definite co-ordination of ideas. And is there any thing wonderful in asserting that some sensible particulars become relatives through divine forms, since we admit that relation subsists also in the intelligible world? But, that relatives have not an essential subsistence here, is not only asserted by the Platonists, but also by Aristotle himself: for, when we say that this thing is a cause or principle, but another a thing caused from a principle, do we not endeavour to show the order which divine natures preserve amongst themselves? According to Aristotle also, of the separate forms which he places over the mundane spheres, some are first, others middle, and others last; and those are of a greater, but these of a less ambit; since they have the same order among themselves, as that of the ethereal spheres.

Aristotle in the next place asks, how the advocates for ideas introduce a third man. For, as all ideas subsist in the several orders of beings, there will not only be three, but many men, because all things may be multiplied: for they will subsist in intellect and in intellects, in one soul and in souls, in universal nature and in particular natures. In the heavens, therefore, and the earth, and nearly in all parts of the universe, the species man will subsist in a manner adapted to the places by which it is received. So that there will not only be three men, but a multitude incomprehensible by our reasoning power. It must, however, be carefully remembered, that sensible natures are not univocal with ideas: for, how can images be univocal with their exemplars? Nor must it by any means be thought that idea participates of any thing; for ideas present themselves to be participated by all things, since they are eminently primary forms.

† Those divine men said, that after the one principle of all things, which they were of opinion should be called the good itself, and the superessential one, there are two causes of all things, a monad and a duad, of infinite power; and these principles they placed in an accommodated manner in the several orders of beings. For there is something which corresponds to the good itself in every disposition of things, and something which is appropriated to the first monad, and the first duad. But Aristotle says, that as they introduce among ideas the essential

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duad

number; and that, prior to this, that which is relative and the essential subsist. And this will be the case with all such particulars as, being consequent to the opinions respecting forms, are contrary to principles.

Further

duad and the essential monad, in the first place, because they are accustomed to distribute things more venerable than ideal causes, they destroy the monad and duad, which rank among principles. For, of the first duad or monad, which will be the more antient, the monad or the duad? And in the next place, because the essential tetrad is double of the essential duad, and the essential duad of the essential monad; this being the case, not only essential number will be prior to the principles, but also relative number: and, in short, Aristotle says that there are many things of this kind, through which wishing to defend the theory respecting ideas, they ignorantly oppose their proper principles.

But that all this is foreign to what these divine men have asserted, is evident to the more sagacious, prior to all reasoning; which I think sufficiently proves that the objections of Aristotle are merely pretended, and not serious. However, as some one may demand a solution of the fallacious reasoning, we say that the nature of *principles* is different from the nature of *ideas*, though something takes place about them equivocally; or rather not about them: for what can supervene the most divine of beings? But it takes place about our discussion of them: for the duad, which ranks as the second of the two great principles, after *the ineffable one*, imparts to all things prolific power, progression, multitude, and multiplication, and excites and moves all things to the spontaneous generation, providential care, and preservation of posterior natures. Hence it fills all the divine and intellectual orders, and also the order belonging to souls, the physical and the sensible, with such numbers as are adapted to each; but it does not suffer any thing to be unproduced which is in any respect naturally adapted to proceed into existence. But *the duad itself*, which has a subsistence among ideas, imparts its own *form* to souls, natures, and bodies. Hence, whether the universe is divided, or the heavens alone, or the reasons of soul also, or, prior to these reasons, circles themselves (for these first employ a twofold division); or whether also any animal has two eyes, or two hands, or two feet, or any other of the works of nature possesses the duad, this proceeds to things from the essential duad, which ranks in the order of ideas, but not from the principal duad, which is prior to ideas, and from which the ideal duad and every intellect derives its subsistence. The same also with respect to the monad: for there is one monad which has the relation of a principle, which, together with the highest duad, imparts subsistence to all things, and is the leader of identity, stability, continuity, and eternal life to *wholes*: but another monad is the essential (*αυτομονας*) which has a priority in the order of ideas, through which participating effects are united, and are continued in their proper habit. As, therefore, these divine men introduced a leading monad and duad among ideas, they did not assign them this dignity for the purpose of destroying the monad and duad which rank as principles; for how could they? since they assert that the ideal monad and duad, together with the whole of an intellectual and intelligible essence, subsist from the principles.

In answer likewise to what Aristotle says, that they introduced monadic number, or number consisting from unities, and on this account made the essential duad double of the essential monad, we reply, that ideal numbers are not denominated from a quantity of units, but from

a certain

Further still: agreeably to that opinion * by which they say that there are ideas, there will not only be forms of essences, but also of many other things. For there is not only one conception of essences, but also of things which are not essences; and sciences will not alone be conversant with essence; and ten thousand similar consequences will ensue. But, according to the necessary, and the opinions respecting ideas, if forms may be participated, it unavoidably follows, that there are alone ideas of essences: for they are not participated according to accident; since each is necessarily participated, so far as it is not predicated of a subject. I say, for instance, if any thing participates of the

a certain character or seal of a most divine and simple essence. Individuals participate of these according to their nature; and, as sensible man participates with colour, figure, and form, of the essential or ideal man, which is without colour, figure, and form; in like manner sensibles participate with quantity of the triad itself, which is devoid of all quantity. To investigate, therefore, monadic multitude among ideal numbers, is just the same as to investigate in the ideal man the liver, spleen, intestines, and the like. Hence, these divine men neither subvert their principles through ideal numbers, nor introduce among intelligibles number subsisting in habitude.

* We have before observed that there are ideas of universal essences, as of man, horse, and the like, and of all such things as perfect these essences, as virtue and science, together with such things as similitude, equality, and magnitude, which accede to souls, to bodies, and to numbers. But things which accede to bodies alone, or corporeal accidents, have their determinate causes, according to Jamblichus, in the reasons or productive powers of nature. For the divine Plotinus observes that the idea of whiteness is not to be placed in intellect. It does not follow, therefore, that there are ideas of all universal conceptions, though the converse is true, viz. that of whatever there are ideas there are universal conceptions; for, if this were admitted, there would also be ideas of things contrary to nature. But neither are there ideas of all such things of which there are sciences improperly so called; though, as they are essences, it is rightly said that they participate ideas. Yet it does not follow, that a thing is essence which participates of essence: for we say that science itself and justice itself are essences, but our habits are not essences. It must also be observed, that nothing belonging to ideas is in a subject, but that every thing which they contain tends to essence. For Aristotle himself, in the eleventh book of this work, manifestly demonstrates that nothing corporeal or incorporeal has an accidental subsistence. We should rather therefore say, that every immaterial and divine form is all-powerful in an unmultiplied, single, and most simple essence, and is participated by sensible natures partially, and not according to all its powers. The duad itself, therefore, contains in its essence the impartible, the intelligible, the productive, and the eternal, and none of these as in a subject. But it is participated by a superior soul, according to more, but by ours according to fewer, of its powers; and by bodies, or corporeal powers, so far as pertains to one or two of its powers. Yet, as we have before observed, it is not necessary that all things which participate of essences should be essences; but as certain things participate impartibles partibly, and intelligibles without intellection and intellect, so likewise they participate essences without essence.

double,

double, this also participates of the eternal, but according to accident: for it happens to the double to be eternal; so that forms will be essence: but these both here and there signify essence. Or, can we say that the one in the many is any thing besides these? If, indeed, there is the same form * of ideas and their participants, there will be something common: for why, of corruptible duads, and of duads which are many indeed, but eternal, is there rather one and the same duad, than of this, and some particular duad? But if there is not the same form it will be homonymous, and will be just as if some one should call Callias and a piece of wood a man, perceiving no communication whatever between them. But if we consider other things, *i. e.* common reasons †, as adapted to forms, as, for instance, a plane figure to the circle itself, and the other parts of the definition of a circle, that to which it belongs being added, if this be done, it is requisite to consider whether or not this is altogether vain. For, to what is it added? to the middle, or to the plane, or to all? For all things which are in essence are ideas, as, for instance, animal and biped. Further still: it is necessary that a thing itself, as for instance a plane, should be a certain nature, which, in the same manner as genus, is inherent in all species.

* But neither are ideas univocal with sensible natures, nor are they equivocal in the same manner as things which subsist from fortune; but they have the same relation as a paradigm and its image; especially since the paradigm, by its very essence giving subsistence to the images, converts them to itself.

† In answer to what is now said by Aristotle, it is necessary to observe that ideas are not, properly speaking, objects of definition. For impartible, simple, and intellectual forms are exempt from definitive reasons, and from every thing which is naturally adapted to be considered by a discursive and evolving energy, such as is that of the dianoëtic power. Hence Plato, in his seventh epistle, says that the circle itself is different from that which is capable of being defined, and which is the object of scientific knowledge. And Aristotle himself, in the eighth book of this work, thinks it just that there should be no definition of the most simple forms. However, though ideas were capable of being defined, it is not necessary that we should use the same definitions in sensibles as in the exemplars themselves. For there is not the same definition of the image of Socrates, and of Socrates himself, though the image of Socrates should be made conformably to the Socratic form. But if any one should say that there is the same definition of both, what should prevent us from understanding intelligible in the one and sensible in the other? For it is fit that all things should subsist intelligibly in idea (if they are altogether inherent), but physically in sensibles the obscure resemblances of ideas. Hence, idea is not in reality capable of being defined; nor, if it were, would it be comprehended by the same definition as its effects. Or, though all these particulars should be granted, nothing will prevent us from admitting that the same things are intelligibly distributed in exemplars, but imaginably or physically in images.

CHAP.

C H A P. V.

BUT most of all it may be doubted* what forms contribute either to things perpetual among sensibles, or to things generated and corrupted: for they are neither the cause to them of any motion, nor of any mutation whatever. Nor yet do they afford any assistance to the science † of other things: for, neither are they the essence of these (since they would be in these), nor do they contribute to the being of any thing, since they are not inherent in their participants: for, if this were the case, they might thus perhaps be considered as causes, as white mingled with white. But that reason which Anaxagoras first, and Eudoxus afterwards, introduced, doubting, and likewise certain others, may be easily confuted. For, to this opinion it is easy to collect many

* Aristotle inquires, respecting the utility of ideas, whether their subsistence contributes any thing to sensibles. To this we reply, that all divine natures are such as they are, both from their own principles and from themselves. But, because their essence is both generative and providential, though they do not subsist for the sake of secondary natures, yet they communicate essence, power, and every perfection to things subordinate to themselves. Indeed, through ideas, such things as are eternal among sensibles, both subsist and perpetually endure; natures of this kind being excited to unceasing life and motion, through love of these all-beautiful and all-perfect essences. We may likewise ask, how the mortal and material effects of nature could proceed into being, unless nature and those demiurgic causes which employ nature as an instrument referred their energy to things terminated, and which have a perpetual sameness of subsistence. For, why is not any thing produced from any mutation? And why do the mutations and progressions of nature appear to be bounded? Surely for no other reason than because there is a pre-existent order in the reasons of nature.

† That the speculation of ideas especially contributes to the science of other things, the divine Plato every where evinces, but especially in the *Parmenides*, in which he says, That he who does not admit the subsistence of ideas will entirely destroy the discursive power of the soul; and in the *Phædo* his demonstrations of the immortality of the soul are principally founded on the hypothesis of ideas. But to urge that the inspection of ideas does not contribute to the science of sensibles, rather becomes any one than a man conversant with demonstration. For, if demonstrations are from things prior and which have a more causal subsistence, as Aristotle shows in his *Last Analytics*, it follows that nothing is scientifically known through its own elements (for neither are these proper causes, except so far as subservient to things more true than themselves), nor by a much stronger reason through its own accidents. The assertions, therefore, of Anaxagoras respecting things of similar parts, and also the doubts of Eudoxus concerning certain things of this kind, are easily subverted. Nevertheless, since ideas are to sensibles the causes of goodness and permanency, they necessarily impart every perfection to the science of sensibles which it is capable of receiving.

things,

things, and such as are impossible. But neither do other * things subsist from forms according to any one of the modes which are usually adduced. And to say that ideas are paradigms, and that other things participate of them, is to speak idly, and to employ poetic metaphors. For, what is that which operates looking to ideas? For it is possible that any thing may be, and may be generated, though it be not assimilated to a paradigm; so that, Socrates both existing and not existing, there will be such a person as Socrates. In a similar manner, it is evident, though Socrates should be eternal, there will be many paradigms † of the same thing, and therefore also forms; as, for instance, of man, animal and biped, and man subsisting as an idea. Further still: forms will not only be paradigms of sensibles ‡, but also of themselves; as, for instance, genus, of generic species; so that the same thing will be both paradigm and image. Again: it may seem to be impossible that essence, and that

* That sensibles do not consist from ideas, neither as from matter, nor as from privation, nor as from material form, is evident; because no one of these is a true cause. But ideas contain the most proper and the most comprehensive causes of all mundane natures; causes which through transcendency of power are exempt from their effects, and are both effective and final.

† It is not proper to refer whatever appears in sensibles and effects to the first producing and intellectual causes of these; but while the sensible man is an animal, biped, rational, mortal, and an infinity of other particulars, the ideal man, or man itself (*αὐτὸ ἀνθρώπου*), is none of these, since it comprehends in itself impartibly the cause of natural and sensible men. There is no necessity, therefore, that the sensible man should participate of many ideas so far as he is man; but, because he is sensible, and on that account participates the cause of man which subsists in nature, that which is in soul, and that which is in intellect, so far it may be granted that he participates of many ideas. Indeed, there is no absurdity in admitting that things last participate of all the causes prior to themselves, since, according to Amelius, the reasons or productive principles of nature may be properly said to participate of ideas, but souls receive their resemblances. So that we must consider a distribution and most exact division of reasons as taking place in effects themselves; but to abstract causes we must assign a profoundly indivisible comprehension of wholes.

‡ It must be granted that, of the causes contained in intellect, some are more universal, and others more particular, because Aristotle himself, as we have seen in the twelfth book, acknowledges that the divine causes of the universe have the same order among themselves with the ethereal spheres; and of these, some are evidently of a greater, and others of a lesser ambit. However, it does not follow from this, either according to Aristotle or the Platonists, that the second in rank are images of the first; but it must be said that divine and intelligible natures are profoundly united together, and pervade each other with perfect purity and without confusion; but it must not by any means be admitted, that the second participates of the first, in the same

that of which it is the essence, should be separate*. So that, how can ideas, which are the essences of things, have a separate subsistence? But, in the *Phædo*, it is asserted that forms are the causes both of being and generation; and yet, notwithstanding the subsistence of forms, things will not be produced, unless there is that which moves. To which we may add, that many other things are made †, as, for instance, a house and a ring, of which they do not assert there are forms. So that it is evident that other things also, of which they say there are ideas, may both be, and be generated, through such-like causes as we have just now mentioned, but not through forms. But, indeed, respecting ideas, many things similar to those already considered, may be collected, both after this manner and through arguments more logical and more accurate.

same manner as secondary and imperfect natures participate of ideas. All the causes, therefore, which subsist in intellect are the true exemplars of things posterior, and receive in themselves no subingression of image.

* It is necessary that the universal energies of divine natures should be eternally in energy; and from this cause *total species* or *idea* can never desert the universe. For, since it is a cause of infinite power, it is necessary, on account of its simplicity and immensity, that it should be a never-failing cause to its effects. But a partial nature would never participate of idea unless it had matter disposed for its participation. The preparation, therefore, of material causes which are conversant with motion, participates of immaterial causes.

† The Pythagoreans and Platonists do not admit that there are fabricative ideas of things which are neither in nature, nor are produced by nature. Aristotle therefore rightly informs us that they were not of opinion that there are intelligible and divine ideas of things artificial. But, that in the soul of artists there are reasons or productive principles which are the exemplars of artificial productions, is not only asserted by these divine men, but is admitted in many places by Aristotle himself. The friends of ideas, therefore, in answer to his pretended objections, may very justly ask how it can be consistently granted that things artificial are accurately fabricated according to their exemplars resident in soul, and yet, that the works of nature are effected without a paradigmatic cause, though art is said to imitate nature in her operation? Indeed, on this hypothesis natural energy can be referred to no definite cause, though Aristotle, in the first book of his *Physics*, says that nature desires form. We therefore ask, what form? Shall we say, that which subsists in motion, and is material? But nature has not yet made this, and it is posterior to nature herself, and is united with a formless subject: to which we may add, the absurdity of supposing that nature should desire that which has not yet a being, which is posterior, is borne along in conjunction with privation, and on this account is base and unlovely. But, if nature aspires after that form which has a separate subsistence, which is both true and prior to herself, and is a divine and real form, it is necessary that this should be intellectual and immaterial, and should possess a perpetual sameness of subsistence, that the desire of nature may be unextinguished, and its energy never-failing.

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CHAP.

CHAP. VI.

SINCE, then, we have concluded thus much concerning ideas, it will be well again to speculate the consequences respecting numbers, which happen to those who assert that they are separate essences, and the first causes of things. But it is necessary, if number * is a certain nature, and there is not any other essence of it, but this very thing itself is its essence, as some assert,—if this be the case, it is necessary, either that something belonging to it should rank as first, and something as consequent which is second, and is different in form; and this either directly subsists in monads, and every monad is incapable of being compared with every monad; or all of them are directly consequent, and, each may be compared with each, as they say is the case with mathematical number; for in mathematical number no one monad differs from another: or some monads may be compared with others, and some not; just as if the first duad subsists after *the one*, in the next place the triad, and then another number. But the monads in each number are capable of being compared, as, for instance, those which are in the first duad, and those which are in the first triad; and in a similar manner, in

* That Aristotle is not serious in the following divisions which he makes through monads, is, I think, evident from hence, that all these divisions are superfluous, and the inquiry which they produce foreign to the purpose. For, if these divine men supposed that separate numbers have their subsistence in a quantity of monads, it would be right to doubt whether all the monads are incapable of being compared, in the same number with each other, and in a different number with other monads; or whether they are all indifferent, like the monads in mathematical number; or whether these are indeed indifferent, and without comparison in different numbers. But, on the contrary, they considered such of these numbers as are separate from the universe as impartible, and without quantity, and as occultly subsisting in divine forms. However, as these numbers proceed together with ideas into the sensible world, they asserted that some of them are inseparable from mundane natures. Hence, some of the Pythagoreans, says Syrianus, discoursed about inseparable numbers alone, but others of such as have a separate subsistence, in which as in paradigms they saw those numbers are contained which are perfected by nature. But others, making a distinction between the two, unfolded their doctrine in a more clear and perfect manner. If it be requisite, however, to speak concerning the difference of these monads, and their privation of difference, we must say that the monads which subsist in quantity are by no means to be extended to essential numbers; but when we call essential numbers monads, we must assert that all of them mutually differ from each other by *difference* itself, and that they possess a privation of difference from *sameness*. It is evident, also, that those which are in the same order are contained through mutual comparison, in sameness rather than in difference, but that those which are in different orders are conversant with much diversity through the dominion of difference.

other

other numbers. But the monads in the duad itself cannot be compared with those in the triad itself, and in a similar manner in the other following numbers. Hence, the mathematician after one numerates two, with the former one another one: and in numerating three he adds another one to these two; and so of the rest. But Plato, after *the one*, considers two other unities without the first one, and the triad without the duad, and, in a similar manner, other numbers. Again, therefore, one kind of numbers must be such as that which was first mentioned, but another that which is employed by mathematicians, and a third that which we have spoken of as the last. Further still: these numbers must either be separate from things or not separate, but subsist in sensibles; yet not in such a manner as was considered by us at first, but as from numbers existing in sensibles. Or one kind of these must have a subsistence, and another not, or all of them must exist. The modes, therefore, according to which it is possible for them to be, are necessarily only these. But those who assert that *the one* is the principle, essence, and element of all things, and that from this and another certain one, number subsists, each of these nearly adopts some one of these modes, excepting this, that all the monads are not comparable; and this reasonably happens. For it is not possible that numbers can have any other mode of subsistence besides those which have been enumerated. Some*, therefore, assert that both are numbers, and that one of these modes which possesses the prior and the posterior accords with ideas: but that mathematical number is different from ideas and sensibles; and that both ideas and mathematical numbers are separate from sensibles. But according to others, the mathematical † number alone is the first of things, and is separated from sensibles. The Pythagoreans ‡ also celebrate

* Aristotle here, says Syrianus, alludes to Plato, as Alexander Aphrodisiensis also observes. Plato indeed asserted these things, and not these only: for, according to him, there is ideal number, or number subsisting in the various orders of ideas; and there is also mathematical number, which has indeed a more excellent subsistence than physical, but is subordinate to ideal number; just as our soul is superior to nature, but posterior to intellect.

† Alexander, says Syrianus, asserts that Aristotle here alludes to the followers of Xenocrates, who separate indeed mathematical number from sensibles, but do not think it is the only number. Indeed, as Syrianus observes, how is it possible, since they were Platonists and were willing to Pythagorize (πυθαγορίζειν) that they should not direct their attention to impartible numbers separated from the essence of soul? But it appears that by mathematical names they considered things which pertain to more excellent numbers.

‡ That the Pythagoreans, says Syrianus, asserted that nature produces sensibles by numbers

brate the mathematical one, but not as having a separate subsistence; but they say that from this sensible essences are derived. For they fabricate all heaven from numbers, only not from the monadic: but they consider monads as possessing magnitude. At the same time they seem to doubt how the first one consists, possessing magnitude. But a certain other philosopher* asserts that the first number ranks among forms; and according to others†, the mathematical number is the first number. In like manner with respect to

must be confessed; but then these numbers were not mathematical but physical; and as they spoke symbolically, it is not improbable that they demonstrated every property of sensibles by mathematical names. However (says he) to ascribe to them a knowledge of sensible numbers alone, is not only ridiculous but highly impious. For they received indeed from the theology of Orpheus the principles of intelligible and intellectual numbers, they assigned them an abundant progression, and extended their dominion as far as to sensibles themselves. Hence, that proverb was peculiar to the Pythagoreans, that *all things are assimilated to number*. This being the case, Aristotle cannot be serious in asserting that the Pythagoreans were alone conversant with bodies, and numbers co-existent with bodies. "For indeed (says Syrianus) Pythagoras himself, in THE SACRED DISCOURSE, clearly says that number is the ruler of forms and ideas, and is the cause of gods and dæmons. He also supposes that to the most antient and artificially-ruling deity, number is the canon, the artificial reason, the intellect also, and the most undeviating balance of the composition and generation of all things." *Αὐτὸς μὲν Πυθαγόρας, ἐν τῷ ἱερῷ λόγῳ, διαρρηδὺν μορφῶν καὶ ἰδέων κραττορα τοῦ ἀριθμοῦ εἰλεγεῖν εἶναι, καὶ θεῶν καὶ δαίμονων αἰτίον καὶ τῷ πρῶτῳ βυτάτῃ καὶ κρατίστεινόντι τεχνητῇ θεῷ κανὼνα, καὶ λόγον τεχνικόν, νοῦν τε, καὶ σταθμὸν ἀκλινεστάτων τοῦ ἀριθμοῦ ὕψους συστάσιος καὶ γενέσεως τῶν πάντων.* "But Philolaus declared that number is the governing and self-begotten bond of the eternal permanency of mundane natures." *Φιλόλαος δὲ, τῆς τῶν κοσμικῶν αἰωνίας διαμονῆς τὴν κρατίστεινόνσαν καὶ αὐτογενῆ συνοχὴν εἶναι ἀπεφηνάτο τοῦ ἀριθμοῦ.* "And Hippasus and all those who were destined to a quinquennial silence (*ἀκουσματικοί*), called number the judicial instrument of the maker of the universe, and the first paradigm of mundane fabrication." *Οἱ δὲ περὶ Ἰππασίου ἀκουσματικοὶ ἀριθμὸν εἶπον κριτικὸν κοσμοῦργου θεοῦ ὄργανον, καὶ παραδειγμὰ πρῶτον κοσμοποιίας.*

But how is it possible that they could have spoken thus sublimely of number, unless they had considered it as possessing an essence separate from sensibles, and a transcendence fabricative, and at the same time paradigmatic?

* *i. e.* Plato.

† Some, says Aristotle, do not admit known mathematical number, but introducing one number, *i. e.* the ideal, they call this also mathematical. They were perhaps induced to this, because mathematical number is twofold, one consisting from monads or unities, and the other essential, with which the artificer of the universe is said to have adorned the rational soul. They were unwilling indeed to call that number which is known to the multitude ideal, as being unessential, but they did not consider that number which is essentially inherent in souls, and from which the monadic originates, as the same with ideal number. However, they did not refuse to call it ideal, in the same manner as we are accustomed to call the middle reasons of the soul ideas.

lengths,

lengths *, and superficies, and solids : for, according to some, those which subsist after ideas are different from such as are mathematical. But, of those who speak differently, some discourse of mathematical natures mathematically, and these are such as do not consider ideas to be numbers, nor assert that there are ideas. But others speak of mathematical natures not mathematically : for they contend that every magnitude cannot be cut into magnitudes, and that any kind of monads do not compose the duad. All, however, consider numbers as monadic, except such of the Pythagoreans as assert that *the one* is the element and principle of things. But these consider monads as endued with magnitude, as we have already observed. In how many ways, therefore, numbers are considered by these men, and that all the modes have been enumerated, is, from what has been said, manifest. All the modes, however, are impossible, though perhaps one more than another.

C H A P. VII.

IN the first place, therefore, let us consider whether monads are capable of being compared with each other, or cannot be compared † : and if they cannot be mutually compared, in what way can we as it were divide them ; for every kind of monad will not admit of comparison with every kind. But those monads which are in the duad, do not admit of comparison with those in the triad ; and thus the monads in each prime number cannot be compared with each other. If, therefore, all the monads are capable of being

* The same thing also may be asserted of geometrical names. For figures subsist after one manner in intellect, and after another in soul, but in both these without dimension. Hence, those divine men, regarding the peculiar nature of things, and not the use of names, spoke of impartible magnitudes, indivisible lines, and the duad without quantity, because they directed their intellectual eye to the causal subsistence of these in intellect and soul.

† All this, if it were seriously said, would be said in vain. For no one of divine and intellectual numbers is monadic. But all arithmetical monads are without any difference. What is asserted therefore by Aristotle does not follow : for it will not be ideal number, since this does not consist from unities. For it is difficult to devise how many unities compose this or that idea. But if the whole proposition is false, which says that every number is monadic, or composed from unities, nothing will be demonstrated from it, but we may rather from what is said conclude the contrary : for if it is true, both according to the Pythagoreans and Aristotle, to say that every number which consists from unities is not ideal number, and the Pythagoreans assert that there is such a thing as ideal number, every number will not consist from unities.

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compared, and are without any difference, mathematical number, and one number alone will subsist; and it will not be possible that ideas can be numbers: for what kind of number will man-itself be, or animal-itself, or any other species? For there is one idea of each, as for instance, one idea of man-itself, and another one of animal-itself. But similar monads, and such as have no difference, are infinite: so that this triad will not in any respect be more man-itself, than any thing else. But, if ideas are not numbers*, it is not, in short, possible that they can have any subsistence: for from what principles will ideas be derived? For number is from the one and the indefinite duad: and these are said to be the principles and elements of number, and cannot be in order, either prior or posterior to numbers. But if monads do not admit of comparison, and are in such a manner incapable of being compared that every one is different from every one, neither is it possible that this can be mathematical number, (for mathematical number consists of monads which are not different from each other, and the things manifested by it, harmonise with monads of this kind), nor yet can this number belong to forms; for the first duad will not be from one and the indefinite duad; and afterwards the following numbers, as it is said, viz. the duad, triad, and tetrad: for at the same time, the monads which are in the first duad are generated; whether they subsist from unequal monads (for from things

* Aristotle rightly assumes, that if ideas are not numbers, it is not possible for them to have any subsistence. But he does not demonstrate that they are not, for it would indeed be impossible. That ideas are not numbers consisting from unities he some time since desired might be granted, but he is not willing to prove it. Aristotle, however, does not consider either *the one* or number, in the same manner as they were considered by the Pythagoreans: for they, when they beheld a twofold co-ordination of things about every being, asserted that the *better* was imparted to every thing from *the one*, but the *worse* from the *duad*. But Aristotle, according to his usual method, considers these names rather mathematically than agreeably to the conceptions of the ancients.

If, therefore, there are ideas, as those divine men have demonstrated, and as we also have evinced there are, ideas will not be numbers composed from unities, since arithmetical unities or monads are without any difference; nor will this be the case even if unities are supposed to be different from each other, unless numbers composed from unities are considered according to a different signification. It must here, however, be observed, that numbers according to their first subsistence are superior to ideas, viz. considered as characterising the *hyperxes* or summits of divine natures; for in this case, they have a superessential subsistence. To those of a *truly* philosophical genius this will be evident, from studying the *Parmenides* of Plato; and, as we learn from Syrianus, this was one of the theological dogmas of the Pythagoreans.

made

made equal they were produced) or have a subsistence different from this.

In the next place, if one monad is prior* to another, it will also be prior to the duad which subsists from these: for when of any thing, something is prior, and something posterior, then, that also which subsists from these, will be prior to this, and posterior to that. Further still †: since *the one itself* is first, and afterwards a certain one of the rest; also, a second after this, and again, a third; there will be a second indeed, after a second, but a third after the first one: so that monads will be prior to the numbers which are composed from them. Thus, for instance, in the duad there will be a third monad, before the number three has a subsistence, and in the triad a fourth, and in the tetrad a fifth, before these numbers subsist. None ‡ of them, however, asserts that monads are after this manner incapable of comparison. But indeed, according to their principles, it is reasonable it should be so, though impossible according to truth: for it is reasonable that monads should be prior, if there is a certain first monad, and a first one; and in like man-

* This, also Aristotle assumes, for the purpose of demonstrating that the monads which are in ideal number are not incapable of being compared with each other: for, if the two monads in the duad cannot be compared, one of these is prior and the other posterior; for, since they are different, they do not proceed together from the principles of number. But, if this be the case, the duad itself will be prior to the junior of these unities, and will be junior to the prior; since it is a mixture of two monads: for, as that liquor which is mingled from wine and honey, is sweeter than wine, but less sweet than honey; so also the duad itself will be posterior to its prior part, but prior to its posterior part. That this, however, is said by Aristotle rather in jest than seriously, is, as Syrianus well observes, obvious to the more sagacious.

† What Aristotle now says is this: if after that unity which ranks as a principle, and has the power of generating wholes, we conceive the prior monad in the duad, there will be a duad from this principal one, and monad, before the duad is generated. And again: if we conjoin two monads of the triad with the first one, there will be a triad, before the triad itself subsists, and universally a quantity of monads will always pre-occupy its proper number. But it has often been shown that assertions of this kind are rather pretended than serious: for how can separation of this kind, and material division, and a composition from things prior and posterior, so as to form one thing by such a conjunction, be adapted to natures impartible, without quantity, and profoundly indivisible?

‡ Aristotle, in what he now says, is evidently not serious: for, if he were to call intelligible essences; or the numbers peculiar to them monads, there would be no absurdity in asserting, since there is an order in divine natures, that *this* is first, and that in a following rank; but, in consequence of considering mathematical monads, and yet taking away that which is peculiar to them, since he supposes them to be incapable of being compared with each other, he evidently jests through these hypotheses, in what he says respecting divine natures.

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ner with respect to duads, if there is a first duad. For after that which is first, it is rational and necessary that there should be a certain second : and if a second, a third ; and so of the rest in a following order. But to assert at the same time, that there is a first and second monad after *the one*, and also a first duad, is impossible. These, however, introduce a monad and a first one, but no longer a second and a third. They also introduce a first duad, but not a second and a third. It is evident *, however, that if all monads do not admit of comparison, it is impossible that there can be a duad and a triad, and other numbers : for whether monads are without any difference, or whether each differs from each, it is necessary that number should be numerated by addition ; as, for instance, the duad, by the addition of one to another one ; and the triad, by another one being added to two : and in a similar manner the tetrad. But this being the case, it is impossible that there should be a generation of numbers, in such a manner as they generate them from the duad and the one : for the duad becomes a part of the triad, and the triad of the tetrad. And the like consequences ensue in the following numbers. But from the first duad†, and the indefinite duad, the tetrad is produced,

* Ideal number, says Aristotle, cannot have any subsistence, that is, the duad itself, and the triad itself, if monads are supposed to be incapable of comparison, to which it is consequent that it is not number composed from unities. This, indeed, he omits, but infers that whether unities are capable of being compared or not, it is necessary that there should not be the triad itself ; because every number is numerated, and completed by apposition, as the duad by assuming unity becomes the triad ; and that on this account there are many duads in the number six, in eight, and in twelve ; and also that the duad is a part, of the triad, indeed, two parts, but the half of the tetrad. There is, however, nothing of this kind in ideal numbers : for these, according to the Pythagoreans, are generated from the monad and indefinite duad, and each of them is one, and no one is a part of another. So that Aristotle indeed is serious in what he says of the properties of ideal numbers, but not when he previously assumes that every number is measured and completed by apposition : for the properties of numbers composed from unities, cannot be transferred to all numbers. Nothing else, therefore, is now concluded by Aristotle, than that it is impossible that the duad itself can be number composed from unities ; which, says Syrianus, prior to all reasoning is nearly granted by all men.

† Aristotle says this in opposition to himself. They, says he, from the duad itself (for he calls this the first duad), and from that duad which has the relation of a principle, which he calls the indefinite duad, perfect the tetrad, neither producing nor increasing it by composition, but the indefinite duad being multiplied into the duad itself generates the tetrad. On which account, they by no means compose ideal number through apposition. Having said thus much, in opposition as it were to himself, he grants that they did not constitute number by apposition, and

produced, being two duads beside the duad itself. But, if the duad itself is not a part, there will yet be another one duad, and the duad will subsist from the one itself, and another one. If this, however, is the case, it is not possible that the indefinite duad can be the other element: for it generates another monad, but not the definite duad.

Further still*: besides the triad, and the duad itself, how will there be other triads and duads? And in what manner will they be composed from prior and posterior monads? For all these things are fictitious; and it is impossible that there should be a first duad, and afterwards the triad itself. It follows, however, that this must necessarily be the case, if *the one*, and *the indefinite duad*, are the elements of numbers. But if the consequences are impossible, it is also impossible that these can be principles. If, therefore, some monads differ from others, these things, and other things of this kind, necessarily happen. But if the monads in another number are different, but those in the same number are alone without any mutual difference, even in this case difficulties as numerous will arise. As, for instance, in the decad itself, there are ten monads; but it is composed both from these, and two pentads. Since, however, the decad is not a casual number (for neither is it composed from casual pentads, nor from casual monads) it is necessary that the monads in this decad should differ: for, if they do not differ, neither will the pentads differ from which the decad is composed. But, since they differ, the monads also will differ. If, therefore, they differ, whether does it follow, that there will not be other pentads, but only these two; or that there

and that the other of the principles which converts all divine natures to itself, and excites them to the completion and generation of second and third species, is the cause of the production of multitude and all multiplication.

* Those divine men after intellectual number placed that which subsists in soul, and next to this mathematical and physical number, yet they did not assert that all numbers are composed from unities, nor did they call unities prior and posterior, as having the relation of subjects to the quantity of numbers; for with them, all numbers were without quantity, except mathematical number; but they contemplated triads, pentads, and decads in them from their powers, and the properties which they possess with relation to divine numbers. Hence, Aristotle also says, it is necessary that there should be prior and posterior triads and duads, since they are perfected from principles of this kind. Indeed, if we assent to these principles, we must admit many orders of numbers. But that it is impossible there should be different numbers, does not seem to be concluded, nor is it possible that it should; for, as Syrianus very justly observes, *that which is true cannot be confused, and that which is false is indemonstrable: το τε τας αριθμους αναριθμω, ου το ψευδης αναριθμωται*

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will be? For in the decad, there is not another decad besides itself. But, indeed, it is also necessary that the tetrad should not be composed from casual duads: for the indefinite duad, as they say, receiving the definite duad, produces two duads. For it causes the duad which it receives to become two.

Again*: how does it happen that there is a certain nature, i. e. the duad,

* These things are by no means doubted against divine numbers; for these are not composed from unities, so as that we should have to inquire what each of these numbers is, besides the unities subject to it: but these objections may be more aptly urged against mathematical number. In defence, therefore, of mathematical number, we may say that as in every thing, according to the doctrine of Aristotle himself, one thing corresponds to matter, and another to form, in the pentad also, or number five, its five monads, and in short its quantity, and the number which is the subject of participation, are derived from the duad itself; but its form, that is, the pentad itself, is from the monad: for every form is a monad, and unites its subject quantity. The pentad itself, therefore, which is a monad, proceeds from the principal monad, or that which ranks as the highest principle, after the ineffable *one*, forms its subject quantity, which is itself formless, and connects it to its own form. For it is again necessary to understand that there are two principles of mathematical numbers in our souls, the monad which comprehends in itself all the forms of numbers, and corresponds to the monad in intellectual natures, and the duad, which is a certain generative principle of infinite power, and which on this account, as being the image of the never-failing and intelligible duad, is called indefinite. While this proceeds to all things, it is not deserted in its course by the monad, but that which proceeds from the monad continually distinguishes and forms boundless quantity, gives a specific distinction to all its orderly progressions, and incessantly adorns them with forms. And as in mundane natures, there is neither any thing formless, nor any vacuum among the species of things, so likewise in mathematical number, neither is any quantity left innumerable, for thus, the forming power of the monad would be vanquished by the indefinite duad, nor does any medium intervene, between the consequent numbers, and the well-disposed energy of the monad.

Neither, therefore, does the pentad consist from substance and accident, as a white man; nor from genus and difference, as man from animal and biped; nor from five monads mutually touching each other, like a bundle of wood; nor from things mingled, like a drink made from wine and honey; nor from things sustaining position, as stones by their position complete the house; nor lastly, as things numerable, for these are nothing else than particulars. But it does not follow that numbers themselves, because they consist from indivisible monads, have nothing else besides monads; (for the multitude of points in continued quantity is an indivisible multitude, yet it is not on this account that there is a completion of something else, from the points themselves) but this takes place, because there is something in them which corresponds to matter, and something which corresponds to form. Lastly, when we unite the triad with the tetrad, we say that we make seven. The assertion, however, is not true: for monads conjoined with monads, produce indeed the subject of the number 7, but nothing more. Who then imparts the heptadic form to these monads? Who is it also, that gives the form of a bed
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duad, besides two monads, and the triad, besides three monads? for either one participates of the other, as a white man, besides white and man; (for he participates of these) or the one is a certain difference of the other, as man besides animal and biped. Further still: some things are one by contact, others by mixture, and others by position; none of which can pertain to the monads from which the duad and the triad consist. But as two men are not one certain thing besides both, the same consequence must necessarily apply to monads; nor must it be said that they differ because they are indivisible; for, on this account points also are indivisible. But at the same time the duad of two men, is not any thing else besides the two. Nor yet, ought this to be concealed, that there will be prior and posterior duads; and in like manner with respect to other numbers. For the duads* in the tetrad

to a certain number of pieces of wood? Shall we not say that the soul of the carpenter, from the art which he possesses, fashions the wood, so as to receive the form of a bed, and that the numerative soul, from possessing in herself a monad which has the relation of a principle, gives form and subsistence to all numbers? But in this only consists the difference, that the carpenter's art is not naturally inherent in us, and requires manual operation, because it is conversant with sensible matter, but the numerative art is naturally present with us, and is therefore possessed by all men, and has an intellectual matter, which it instantaneously invests with form. And this is that which deceives the multitude, who think that the heptad is nothing besides seven monads. For the imagination of the vulgar, unless it first sees a thing unadorned, afterwards the supervening energy of the adorning, and lastly, above all the thing itself perfect and formed, cannot be persuaded that it has two natures, one formless, the other formal, and still further, that which beyond these imparts form; but asserts that the subject is one, and without generation. Hence, perhaps, the ancient theologists and Plato ascribed temporal generations to things without generation, and to things which are perpetually adorned and regularly disposed, privation of order and ornament, the erroneous and the boundless, that they might lead men to the knowledge of a formal and effective cause. It is, therefore, by no means wonderful, that though seven sensible monads are never without the heptad, these should be distinguished by science, and that the former should have the relation of a subject and be analogous to matter, and the latter should correspond to species and form.

* This is said in conformity to that conception, that the second of the two great principles after the ineffable cause of all, doubles numbers. In reality, however, this neither militates against ideal, and impartible number, nor against mathematical, and which consists from monads. For in the latter, the quantities of the lesser numbers are placed together, and subjected to the form of the greater number, and not the numbers themselves. As, therefore, when water is changed into air, the water does not become air, or the subject of air, but that which was the subject of water becomes the subject of air, so, when the triad unites itself with the duad, the species or forms of the two numbers are not mingled, except in their immaterial reasons, in which at the same time that they are separate, they are not impeded from being united, but the

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tetrad subsist together with each other, but they are prior to those in the octad; and as the duad produces the duads in the tetrad, so these duads produce the tetrads in the octad itself. So that, if the first duad is an idea, these also will be certain ideas. The same* reasoning will likewise take place with respect to monads: for the monads which are in the first duad will generate the four monads which are in the tetrad. So that all monads will be ideas, and idea will be composed from ideas. And hence, it is evident that those things also of which these are ideas will be composites. Just as if any one should say that animals are composed from animals: if, therefore, there are ideas of these, ideas will be composed from animals. And, in short, to make monads in any respect different†, is absurd and fictitious. But, I mean by fictitious, that which is forcibly introduced to an hypothesis. For we do not see that monad differs from monad either according to quantity or quality: and it is necessary that every number should be either equal‡ or unequal, but especially monadic number. So that, if neither greater nor lesser, it must be equal. But we consider things which are equal,

quantities of the two numbers which are placed together become the subject of the pentad. The triad therefore is one, and also the tetrad, even in mathematical numbers: for although in the ennead or number nine, you may conceive a first, second, and third triad, yet you see one thing thrice assumed; and in short, in the ennead, there is nothing but the form of the ennead in the quantity of nine monads. But, if you mentally separate its subject, (for form is impartible) you will immediately invest it with forms corresponding to its division: for our soul cannot endure to see that which is formless, unadorned, especially as she possesses the power of investing it with ornament.

* Number, as subsisting among ideas, is not composed from monads, nor are ideas composed from ideas; as, for instance, the idea of horse from the idea of man and dog, in the same manner as horse, in this sensible region, is composed from sensible natures. Nor in mathematical number are the monads different, but all those which are subjected to numbers are without difference; except that monad which is the principle, fountain, and mother of all number of this kind. Not only the many monads of mathematical number are equivocal to this monad; but the indefinite duad of such number is equivocal to the indefinite duad of intelligibles.

† These things are not asserted against the monads which are subjected to numbers: for they neither differ in quantity, since all of them are the least, nor in quality, for they are formless.

‡ Equality, indeed, and inequality permeate every number, the natural, the supernatural, and the mathematical. But it is here worthy of observation, that Aristotle manifestly acknowledges that all numbers are not composed from monads; for the expression "*but especially monadic number*" is an evident confirmation of the doctrine of the ancients. As all his arguments, therefore, are taken from numbers composed from unities, they do not in reality oppose those numbers which rank among ideas.

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and altogether without difference, as the same in numbers. And, if this be not the case, neither will the duads in this decad be without difference, since they are equal: for what cause can he assign who says that they are without difference?

Further still*: if every monad and another monad make two, a monad taken from the duad, and a monad from the triad will be two; and this duad will consist of monads which have no diversity. It may therefore be asked, whether this duad is prior or posterior to the triad? For there appears to be a greater necessity that it should be prior; since the one subsists together with a triad of monads, but the other with a duad. And we, in short, apprehend that one and one are two †, whether they are equal or unequal; as, for instance, the good and the evil, man and horse. But, if the number of the triad is not greater than that of the duad, it is wonder-

* It would be absurd to suppose that Aristotle is serious in what he now says, or was in what he has before said concerning ideal numbers: for neither are two monads the subject of the duad itself, nor three of the triad itself: nor, if they were, would it be possible to take from both, and make something else, because both sameness and difference are in each of these. And if you should take difference from each of them, or from one of them difference and from the other sameness, you would not, indeed, produce any third thing mingled from both. Indeed, all the questions now proposed by Aristotle are taken from things material and altogether partible, and are entirely foreign from intellectual, simple, and impartible essences. But, if Aristotle's questions pertain to mathematical number, they may be easily solved from what has been already said: for it is not necessary that we should take from the duad or the triad, that we may make other duads; since these things take place about things numerable, as from two horses, and three men. If, therefore, we take the duad from both, we make a tetrad from dissimilar monads. But, if each be what it is, it may cast away the duad. All these imaginations, however, which announce numbers to be of posterior origin, and to subsist by an abstraction from sensibles, serve only to lead us into the mysteries of numbers of a much nobler origin, and of a much superior order.

† The Pythagoreans, says Syrianus, called forms or ideas monads, as being the pre-subsisting measures of sensibles. This being the case, as forms themselves are different, they necessarily said that these monads also are different. The monads, therefore, in intellect are different through intellectual difference, and those in soul possess a still greater difference in consequence of being much more remote from the ineffable one. But again, all these monads may be compared with each other, on account of the union which pervades all things from the good itself, and through identity being victorious in immaterial forms. Syrianus adds, that the Pythagoreans neither referred any of the monads which Aristotle now examines to ideal numbers, nor related their diversities.

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ful*: and, if it is greater, it is evident that equal number also is inherent in the duad; and is not different from the duad itself. This, however, will not happen, if there is a certain first, and also a second number; nor will ideas be numbers: for this is rightly said by those who think it proper that monads should be different; since, as we have before observed, they will be ideas: for the species of both is one. But, with respect to monads, if they are without difference, this also will be the case with duads and triads. So that it is necessary to say to the authors of this assertion, that in enumerating one, two, that which is pre-existent must not be admitted: for neither is generation from the indefinite duad, nor is it possible that idea can subsist: for one idea would be inherent in another; and all forms would be parts of one. Hence, with respect to the hypothesis indeed, they speak rightly, but simply considered not rightly; for they subvert many things: since they say it is dubious†, whether when we numerate and predicate one, two, three, we assume any thing, or effect this according to parts. But we do both; on which account it is ridiculous to refer this to so great a difference of essence.

* It is by no means wonderful, if the Pythagoreans, asserting that there are such things as the duad itself, and the triad itself, also said that the triad is not more ample than the duad, and that the duad is not inherent in the triad: for neither do these numbers participate of quantity, nor is the form of equality or inequality inherent in them after the same manner as in numbers composed from unities. For in those, equal numbers are never also unequal; but, in ideal numbers, the same are both equal and unequal to each other, just as they are both *same* and *different*. And this arises from their receiving the illuminations of the genera of being, and the most comprehensive of forms. Nor is this attended with any contradiction: for they are not unequal, so far as they are equal, nor dissimilar, so far as they are similar, nor different, so far as they are the same: but they are indeed similar, equal, and the same through similitude, equality, and identity; and dissimilar, unequal, and different, through forms, opposite as it were to the former: for it is not possible, since the monad and indefinite duad rank among the first principles of things, that the natures which subsist from them, should not receive the powers of both.

† When the form of the triad itself is received by three monads, the triad in energy is produced, and becomes one thing. But this now subsisting in energy will not become the tetrad or the number four, by the addition of the monad: for how can the form of the triad be transmuted into that of the tetrad? But the triad, which is considered in three monads alone, is in mere capacity, which, when it is conceived without the form of the triad, if it assumes the monad will make indeed the subject of the tetrad; and this again, so far as it is formless, may, by assuming the monad, become the subject of the pentad; but, when occupied by the form of the triad, it alone produces the triad. Divisions, therefore, and multiplications arise from the matter and the quantity of numbers, and not from forms; for these are not only themselves immovable, but they impart their own one form to the natures which they supervene.

CHAP.

C H A P. VIII.

IN the first place, however, it will be well to define the particular difference, if there is any, between number and the monad. But it is necessary that this difference should be, either according to quantity, or according to quality. Neither of these, however, appears to be possible; but the difference so far as number, is according to quantity. If, therefore, monads also differ in quantity, one number will differ from another, though equal to it in the multitude of monads. Further still: whether are the first monads * greater or lesser, and whether do they afterwards increase, or the contrary? For all these particulars are absurd. But neither can they differ according to quality: for no passion can be inherent in them; since they say that quality is present with numbers posterior to quantity.

Again †: this will neither happen to them from *the one*, nor from the duad.

* These things are rightly said against monads considered according to their usual acceptation. Nevertheless, if any one attends to the generation of numbers composed from unities, he will see that the form which brings with it quality itself, afterwards gives formation to its subject quantity.

† Because Aristotle assumes *the one*, for the *monad* which has the rank of a principle, as he is apparently unwilling to allow that it has any quality, he does not admit that it is the cause of quality. The indefinite duad, however, is rather the cause of quantity only, and not of both quantity and quality. But this again arises from Aristotle pretending that the triad is nothing but three monads: for in reality, if this were the case, the duad which generates quantity, would also produce quality. But now, this generates infinite monads; but the other, that is, the better principle, bounds and distinguishes them by forms.

Moreover, says Syrianus, Aristotle very properly desires the Pythagoreans to show, not only that ideal monads differ, but also in what their difference consists. And they will reply indeed, says he, that it is not the difference of monads which are the subjects of number; (for they did not admit that there was any difference among these) but a difference corresponding to the various orders of being: for when they say that unity is the least of quantity, or the first and common part of quantity, they define known mathematical unity. But, when they say that unity is the form of forms, they exhibit the original cause of ideas, which comprehends in itself the forms of all numbers, and which the Stoics did not refuse to call *one multitude*. Again, says Syrianus, when they discoursed concerning divine monads, they considered one monad as intelligible, from the undecaying retreats of which, as we have before observed, number proceeds; but another as intellectual and demiurgic, which they denominated Jupiter, concerning which, many of the ancients, and likewise many of the more recent Platonists have written; but especially the divine Jamblichus, who has most clearly, says Syrianus, discoursed on these monads, in the seventh book of his Collection of Pythagoric dogmas, Syrianus adds, that

duad. For *the one* does not partake of quality, but the duad partakes both of quantity and quality: for the nature itself of the duad is the cause that beings are many. If, therefore, this subsists in a certain respect differently, it must be said that this is especially so in the principle; and we must define respecting the differences of the monad, that it is especially necessary, and why it is so, that this should be the case. But, if monads do not differ in quantity, nor yet in quality, what other difference in them can they assign? And indeed, if ideas* are numbers, it is evident that in neither of these ways, can all monads be compared with each other, nor yet be mutually without comparison. Nor again, as certain others† speak concerning numbers is it well said. But these are such as do not indeed admit that there are ideas, neither simply considered, nor yet as being certain numbers, but assert the subsistence of mathematical entities, and contend that numbers are the first of things, and that the principle of them is *the one itself*: for it is indeed absurd‡ that *the one* should be something which is first of unities, as they say it is; but that the duad should not be something, which is first of duads, nor the triad of triads; since the same reasoning will apply to all

that he who is capable of understanding the sacred discourse (*ἱερὸς λόγος*) of Pythagoras, will there find all the orders both of monads and numbers completely celebrated. According to the Pythagoreans, therefore, there is a necessary difference among the divine monads: for, in every progression of things, it is requisite that the monad, which is the leader of that progression, should be more multiplied, than the monads which precede it; and therefore as many, and such as are the orders of beings, such and so many are the differences of monads which rank as principles.

* Indeed, if ideas were numbers composed from monads, all the hypotheses respecting monads would be confuted in them: for, whether the monads of ideal number are without any difference, many absurdities will follow; since there will be no difference between number composed from monads and ideal number: or whether they are different, or some of them are different, and others not, the discourse of Aristotle about them will be fictitious. But he who asserts that ideal number is not composed from monads, will not be disturbed by any of the pretended objections of Aristotle; for nothing indeed is said against such an assertion.

† If, says Syrianus, there were any of the ancients who asserted these things, they are very properly reprobated by Aristotle. But perhaps they did not use the name of ideas, but signified the properties of divine essences by mathematical names: for how could they give *the one* and number a subsistence prior to wholes, unless they had venerated the *superessential one*, true beings, and the order of ideas?

‡ Aristotle rightly sees that the dogma is consistent with itself: for, if in every order of beings there is a monad which has the dignity of a leader, and if all these monads proceed from a *superessential one*, abstracted from all things, it is necessary that these should be ideal numbers.

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of them. If, therefore, this is the case * with the particulars respecting number, and some one alone admits the subsistence of mathematical number, *the one* is not the principle of numbers: for it is necessary that a one of this kind should differ from other monads. But if this be the case, a certain first duad also must differ from other duads: and a similar consequence must take place with respect to all following numbers. But if *the one* is the principle, there is a greater necessity that the particulars respecting numbers should subsist (as Plato said), and that there should be a first duad and triad, and that numbers should not admit of comparison with each other. But yet again, if any one adopts these positions, it has been said by us that many impossible † consequences will ensue. It is however necessary ‡, that either these or those positions should be adopted; so that if neither of them is true, it is not possible that number can have a separate subsistence. But, from these things, it is evident that the third mode is the worst §, I mean that which asserts that mathematical number is the same with the number belonging to forms: for it is necessary that two errors should accord in one opinion. For neither can mathematical number subsist in this manner; but it is necessary that he who lays down the peculiar hypotheses

* The whole reasoning is as follows: If mathematical number alone subsists, *the one* will not be the principle of things: but if *the one itself* is the principle of things, Plato is victorious, there is ideal number, and the one kind of number essentially differs from the other. But it will be our province afterwards to show that *the one* is the principle of things, which, since it is neither intellect, nor being, nor number, is the cause of all these, and imparts essence and union to all things: for, this being sufficiently established, Aristotle will be found to assent to all the legitimate dogmas of Pythagoras and Plato.

† Nothing impossible will however happen, if we reason from a true hypothesis, and conformably to the meaning of the ancient philosophers.

‡ If number, says he, has a separate subsistence, it is necessary that either mathematical number should be first, or ideal number. It must be observed, however, that there are other numbers, viz. such as are superessential, prior to ideal numbers.

§ Some, says Aristotle, make two orders of numbers, and separate them, as Plato; for he manifestly asserts that mathematical is different from ideal number. But others, as some of the Pythagoreans, admit only one kind of number, viz. the mathematical; and others know indeed both mathematical and ideal number, but make them to be one. But perhaps, says Syrianus, he means in this place Speusippus and Xenocrates, who, he says, were the leaders of this most depraved hypothesis. We have, however, already observed respecting these philosophers, that though they employed the same names, yet they knew the distinction of numbers according to ideas.

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should be prolix, and that he should also necessarily enumerate the consequences which happen to those who speak of numbers as if they were forms.

But the mode of the Pythagoræans* has partly fewer difficulties than those which we have before mentioned, and partly has others which are peculiar. For indeed, to make number inseparable from sensibles, takes way many impossibilities; but to suppose that bodies are composed from numbers, and that this number is mathematical, is absurd: for neither is it true to say that there are indivisible† magnitudes. And, in the next place, because

* This is, in reality, the speculation of Pythagoras and the Pythagoræans, and of those who legitimately received the dogmas delivered by them respecting numbers. But Aristotle here subdivides, and says that they alone venerated that, with which they were severally conversant. Lastly, he praises the Pythagoræans, as asserting that numbers are inseparable from sensibles; but reproves them for saying that bodies consist and are generated from numbers. But it appears to me to be very evident that Aristotle is neither serious when he praises, nor when he blames the Pythagoræans for speaking in this manner: for who, says Syrianus, can refrain from laughing, on hearing that the Pythagoræans were ignorant of separate numbers, when Pythagoras himself was accustomed to define numbers in two ways? by one of which definitions, he evinced numbers to be entirely separated from sensibles, and to be unpolluted by them; but by the other, he taught their demiurgic, providential, and defensive power. For, when he says that number is the extension and energy of the spermatric reasons subsisting in the monad, the defines that number which proceeds from its own principle, self-prolific, and self-motive, which is established in itself, and has a separate subsistence in all various forms. But when he says that number is that which subsists prior to all things in a divine intellect, by which and from which all things are co-ordinated, and remain properly separated in indissoluble order, he celebrates the paradigm, and the artificer and father of gods, dæmons and mortals. In like manner the followers of Hippasus said, that number is the first exemplar of the fabrication of the world, and the judicial instrument of its divine artificer. Philolaus also affirms, that number is the self-begotten and ruling bond of the eternal duration of mundane natures; and almost all the other Pythagoræans, in conformity to this theory, asserted that there are different kinds of numbers. Nor must we think, that because the Pythagoræans said that bodies derive their subsistence from natural numbers, on this account they alone directed their attention to numbers inseparable from sensibles, or ascribed magnitude to numbers; for neither did they alone discourse about natural numbers; nor did they consider natural and mathematical number as the same; nor ascribe magnitude to numbers which are the causes of magnitude.

† What the Pythagoræans assert, says Syrianus, cannot be subverted, and will continue through the whole of time. For that which is true, according to the assertion of the divine Socrates, cannot be confuted. "But the things, (says he,) which Aristotle now confutes, accord with any rather than the Pythagoræans: for neither do they say that the number by which we measure sensibles is the cause of sensibles: and if they considered in it the images of

because they especially subsist in this manner, the monads do not possess magnitude. But how is it possible that magnitude can be composed from indivisibles? However, arithmetic number is monadic; but they assert that beings are number. They adapt, therefore, speculations to bodies, as if from them numbers subsisted. Further still, therefore, it is necessary, if number is something essentially belonging to beings, that some one of the above-mentioned modes should take place. But this is impossible. It is evident, therefore, that there is no such nature of number as those introduce, who make number to have a separate subsistence. Further still: it may be asked*; whether each monad consists from *the great* and *the small* equalised, or

of sensible number; as in a space (*χωρον*) of two hundred and ten, they affirmed that the idea of body is exhibited; but of fire in unity, of air in the triad, of earth in the heptad, and of water in the ennead; yet these were assumed by them through a certain similitude, for the purpose of representing natural powers. But neither were they of opinion that the monads in this number either possess indivisible magnitude, or are at all inherent in sensibles; but when they speak of indivisible magnitudes, they refer us to the causal reasons of magnitudes, and to the paradigmatic cause of things great, which Plato was, in reality, accustomed to call magnitude itself. Moreover, when they assert that monads have magnitude, they celebrate the power of demiurgic or fabricative monads pervading through all things. But, when they say that magnitude consists from indivisibles, they do not assert this, as if indivisibles produce intervals by any kind of junction, or coalition; for this is the doctrine of Democritus, and contradicts geometry, and almost all sciences; but they signify, that whatever among things indivisible are intellectual, unpoluted, fabricative, and vivific forms, these, not departing from themselves, give subsistence to other things, and to corporeal bulk among the last of things. But such things as are physical, and which verge in their energies to matter, these, though they are without bulk, and have an incorporeal subsistence, and though they are the causes of corporeal composition, yet after a manner they subsist together with, and on this account may be said to be inseparable from, bodies; but they denied for many reasons that body is fabricated from bodies. If, therefore, this is true, it is altogether necessary that bodies should have their subsistence from indivisibles; yet it does not follow that they are composed from indivisibles, or can be resolved into them, except by a mental process."

* In answer to the present inquiry of Aristotle, it may be said, that whether any one considers the indefinite duad according to its first subsistence, i. e. as the second of those two great principles after the ineffable cause of all, or as intellectual, or as subsisting in soul, or physical, or as participated by matter, yet we must never assert that it is either active or passive divisibly, through *the great* and *the small*, but that it imparts *the great* and *the small* to each of the natures generated by it, in a manner accommodated to the several orders of beings. But with respect to the monads in mathematical number, since Aristotle at present considers these, and indeed is not willing, consistently with the mask which he assumes, to speak of any other, of these we say, that they are produced by all the principles, and by the monad and indefinite duad, yet do not contain *the great* and *the small* divisibly, nor ever did; so that we might doubt in what each

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monad

or one monad from the small, and another from the great? If then this be the case, neither is each number from all the elements, nor are the monads without difference: for, in this the great will be inherent, but in that the small, being naturally contrary. Again: how do these elements subsist in the triad itself? for one of them is superfluous. But through this perhaps they make *the one* itself the middle in the odd number. But if each of the monads is from both the elements equalized, how will the duad be one certain nature, composed from the great and the small? or in what will it differ from the monad? Further still*: the monad is prior to the duad: for, being taken away, the duad also is taken away. It is necessary, therefore, that it should be the idea of idea, being prior to idea, and having a prior generation: for the indefinite duad was effective of duality. Further still: it is necessary that number should be either finite† or infinite; for they make number separate:

monad differs from the duad itself; and that they are with respect to other numbers, and the duad itself formless and infinite. We must, however, assert that they also are detained by the image (*εικασματι*) of *the one*. But if the inquiry is made respecting immaterial monads (for it is lawful to call intellectual forms not only numbers, but also monads), we may much more assert that each of these is from all the principles, and that they possess from *the one* their single form and monadic nature (*ενιαιον ειδος και το μοναδικον*); but from the indefinite duad, impartibility and the ability of pervading through all things, as well in their fabricative as in their providential and guardian powers. For it is requisite to suppose great and small of this kind among divine natures.

* The monad, says Aristotle, is prior to *the duad itself*; but if *the duad itself* is an idea, the monad also, which is more antient than this duad, is an idea. It proceeds, therefore, from something; but it cannot proceed from the indefinite duad, for that also doubles things simple. Here Aristotle does not distinguish concerning what monad he speaks, but manifestly proposes a doubt respecting the known duad, which is not in ideal number, but has an abject subsistence in the last of mathematical numbers; nor is it more antient than the duad which is composed from duads, unless perhaps in generation, but it is not essentially more antient. For of this kind are material causes. But both this and every subject of mathematical numbers are produced from all the principles, but especially from the duad peculiar to them. For this, when numbers are divided into matter and form, is more the principle of matter; but when into the even and the odd, it is more the leader of the even. Producing, therefore, these things, and many others of a wonderful nature about numbers, it is deservedly called *duad-effective* (*δυσποιος*). For *the duad* is after a manner all matter, every thing even, and every thing oblong, and whatever else belongs to this co-ordination.

† The division is inevitable, and the cause is very weighty; for neither can be asserted definitely in sensibles; but it must be said, that things which subsist in one time are finite, and that those which subsist in an infinite time are infinite in number: but in things which subsist always the same and after the same manner, and in which the energies of time are unknown, we must say it is necessary

parate : so that it is not possible that the other of these should not subsist. That it cannot therefore be infinite * is manifest : for infinite number is neither odd nor even. But the generation of numbers is always either of the odd number or the even : for, when unity falls upon an even number, an odd number is produced ; but when the duad falls upon the even, that number which is from unity is doubled ; and when it falls upon the odd number an even number is produced. Again † : if every idea belongs to some particular thing,

necessary to assume either the infinite or the finite, because divine natures are indeed infinite in power, but finite in number. But when, in speaking of divine natures, it is said that the triad is here and the tetrad there, and that the heptad is in one place and the decad in another, the numeration which is adopted in other numerable natures must not be adopted here ; but language of this kind is employed because all things there are *perfect, rank as unbegotten principles*, and comprehend in themselves wholes. For among them a different property accords to different natures, though at the same time all are in all. In those divine natures, therefore, in which the first perfect is beheld, the *triad* is said to subsist ; but the *tetrad* in those in which all mundane natures are comprehended according to the causal nature of principle (*αρχονδος*). In like manner, the *heptad* is said to subsist in those through which generated natures receive the beneficent illuminations of providence without generation ; and lastly, the *decad* in those in which all things are previously comprehended intellectually, and with greater distinction and separation. And such is the theory of the Pythagoreans, as far as it is possible to speak with brevity of things of the greatest moment. But Aristotle, conformably to his usual method, again mingles known mathematical monads with divine numbers.

* Some one may rather properly urge these doubts against mathematical number, but not against divine and ideal number. For the even and the odd subsist in the latter, not as they are now considered by Aristotle, but rather as the poets are accustomed to speak : *Καλῶτε μιν, πάντες, τε θεοί, πατρὶ τε θεαῖναι* ; “ *Hear me, all ye gods and goddesses.*” For there Jupiter, the demiurgic intellect, fills up the two co-ordinations of divine and providential intellection. For, of the divinities which proceed from the father of gods and men, some abiding in their parent, and never departing from their domestic monad, whom the poet therefore places in the abode of Jupiter, providentially preside over the universe together with their father, and, in consequence of possessing an essence separate from mundane natures, are never represented as engaging in war or discord ; but others subside into manifold orders, become more partial and proximate to the natures which they govern, and, on account of abundantly sympathizing with inferiors, war with each other. But to him who thus doubts respecting mathematical number, it may be said that every number which is assumed is finite, and is either even or odd ; but that which is not yet assumed is unknown, formless, and infinite, and is, indeed, in capacity either even or odd, but is neither in energy.

† Let it be demonstrated by Aristotle, says Syrianus, that intellectual numbers are not infinite of their own proper nature. For, though some one may refuse to admit the infinite in them, not for the reasons which he assigns, yet this at least is sufficiently demonstrated by Philolaus : “ for no number (says he) will be known if all of them are infinite.” If, therefore, divine
number

thing, but numbers are ideas, infinite number also will be the idea of something, either of sensibles or of something else; although this is neither possible according to position, nor according to reason: in this manner, however, they arrange ideas.

But if number is finite*, how far does it extend? For this ought to be shown, not only that it is, but also why it is. But if, as some say, number extends as far as the decad†, in the first place, forms will swiftly fail; as, for instance, if the triad is ideal man, what number will ideal horse be? For every ideal number extends as far as the decad. It is, however, necessary that certain numbers should be in these: for these are essences and ideas; but at the same time they will fail, if they exceed the species of animal. It is also evident, that if the triad is after this manner ideal man‡, this will also be the case with other triads: for those in the same numbers are similar; so that there will be infinite men. If, indeed, every triad is an idea, each will be ideal man; or, if this be not admitted, at least it will be men. But if the tetrad itself is the idea of any thing, as of horse, or that which is white, man will be a part of horse, if man is the duad. It is also absurd that there should be

number knows itself, it is because it is bounded in itself; and if its magnitude is according to the will of its principles, this will be because its measure is previously comprehended by their will. It will, therefore, no otherwise be infinite, than as possessing infinite power, or as considered with relation to us.

* It must be carefully observed, that divine natures are not numerable by our nature. But when the Pythagoreans speak of triads, tetrads, heptads, and decads, among divine natures, they are not destitute of reasons adapted to these considerations, as we have just before briefly shown.

† Divine men, says Syrianus, called the decad an ideal number, as being the mundane paradigm, and the boundary to all things. They likewise asserted, that as the decad comprehends every number within itself, not *occultly* as the monad, nor *essentially* as the tetrad, but with abundant diversity and division, so the intellectual fabrication (*νοερα δημιουργια*), or, in other words, the intellect of the mundane artificer, comprehends in itself the forms of the universe. And this opinion, says Syrianus, Aristotle derived from Orpheus and Musæus, and their followers (*και ταυτην την δοξαν απο Ορφεως, και Μουσους, και των ενειθεν καταγομενων υποδεξαμενος ο Αριστοτελης*). But here again Aristotle, as usual, considers the decad only, which is composed from unities.

‡ It has been already said, that not only every ideal number is one, but also every mathematical number, if that is assumed which is considered in energy, and in conjunction with its own form. But the triad itself will not be the paradigm of man, but of all the triads which are posterior to it. Hence there is one cause of the many, of *these* indeed, which are proximate to itself, but of *other things*, situated in particulars.

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an idea of the decad *, and not of the endecad, nor of the numbers consequent to the endecad.

Again: certain things both are, and are generated, of which there are no ideas: so that it may be asked on what account there are no ideas of these? Forms, therefore, are not causes. Further still †: it is absurd that number, as far as the decad, should be in a greater degree a certain being, and the form of the decad itself; although of this indeed there is no generation as of the one, but there is of that. But they speak as if number as far as the decad was perfect, and therefore generate the following numbers, considering as a vacuum, analogy, the odd, and other things of this kind within the decad. For they attribute some things to principles, as, for instance, motion and rest, good and evil; but others to numbers. Hence *the one* is odd: for, if in the triad, how is the pentad odd? Again: how far do magnitudes and such-like things.

* There is no absurdity in admitting this, if it be considered that there are ideas only of simple natures, and not of things composed from kindred elements. Whence, says Syrianus, the Pythagoreans called every ideal number the decad, for the above-mentioned reasons: nevertheless they also established an idea of every number as far as to the decad; for these are most simple, and possess among themselves a specific difference. But the number eleven is a composition of two pre-existing numbers.

† There is a defect here, says Syrianus, in the sentence; but it will be perfect if we read: "Further still: it is absurd that number should not proceed as far as to eleven; because *the one* has more of being than the decad, and is the form of it." *The one*, therefore, is called by the Pythagoreans the form of the decad; not indeed any unity indiscriminately, but that which ranks as a principle, and which in defining they call *the form of forms*. Nevertheless, though this monad is the form of all arithmetical forms, yet it is especially said to be the form of the decad: for what the monad is to all numbers simply, that the decad is to all the posterior decads, hundreds and thousands; whence also, according to a secondary progression, it is denominated a monad. As, therefore, intellect is indeed the form of all things, but especially of the soul; after the same manner the monad, though it is the form of all numbers, yet is principally so of the decad. To this monad, therefore, the unbegotten particularly accords, and not to that which belongs to the number eleven. But Aristotle was not ignorant of the reason why the Pythagoreans produced number as far as to the decad. For this number is the ultimate perfection of all numbers, containing all things in itself. The more exact too of the Pythagorean discourses, says Syrianus, do not leave any example of a vacuum in numbers, because neither is there a vacuum in beings, as Jamblichus shows in the fifth book of his Collection of Pythagoric Dogmas. He further adds, But the spaces of numbers, and especially the proportions which are themselves entirely filled up by numbers, bring to our recollection the space or region of the universe, which in its own proper nature is void, but is filled by intellectual fabrication, and by the circular motion of ether, which embracing and compelling all things towards itself, does not suffer any part of the universe to be void, but renders the world throughout sympathetic and in harmony with itself. In like manner, neither does the monad which gives

things partake of quantity? as, for instance, the first indivisible line, then the duad, and afterwards these also as far as to the decad.

Further still *: if number is separate, some one may doubt whether *the one* is prior, or the triad and the duad: for, so far as number is a composite, *the one* is prior; but so far as universal and form are prior, number has a priority of subsistence; for each of the monads is a part of number as matter, but that as form. And indeed the right angle is in a certain respect prior to the acute, because it is limited by its definition; but in another respect the acute angle is prior, because it is a part, and the right angle is divided into

gives subsistence to numbers, leave any void region, but fills with succeeding numbers, without intermission, all the numeral receptacles. But it is evident that every proportion may be considered as subsisting within the decad: for the arithmetical subsists in the natural progression of the numbers 1, 2, 3, &c.; the geometrical in the numbers 1, 2, 4, and 1, 3, 9; and the harmonic in the numbers 2, 3, 6, and 3, 4, 6.

The Pythagoreans, therefore, says Aristotle, assigned all things to the principles, viz. to the monad and the duad; rest, indeed, and the good to the monad, but motion and evil to the duad. The two co-ordinations also in numbers, as far as to the decad, may very properly be called principles, because, in the order of beings, some things are suspended from the principles alone, viz. from the ineffable one, and the two great principles of things posterior to it, *bound* and *infinity*; but others also pre-assume a formal cause. But the apparent opposition which Aristotle makes to the Pythagoreans in the end, may be easily solved: for he inquires, if the triad subsists through *the one*, why the pentad does not also subsist through the triad, and likewise every odd number, in the same manner as every even number subsists through the duad? The answer is obvious: that the first and incomposite number appears to derive its specific distinction from the monad alone; but that number which is second and composite, has also another measure from the monad. Hence the monad is the form of all odd numbers, as the duad of all even. For, in short, it is requisite that the triad should be similar to the duad, not from ranking as a principle, but rather through the monad. From these words, therefore, of Aristotle, it appears that even according to him there is another cause through which the Pythagoreans produce the paradigms of numbers as far as to the decad. For, if they were willing to consider the causes of all things in numbers; but they saw the causes of all things in the numbers as far as to the decad, it would be superfluous to suppose paradigms of the following numbers. Let it be also observed, that the number eleven has not together with the decad that monad which is the cause of the decad; but a monad, which is as it were a part of the decad, and of the duad, and of every other number.

* Aristotle both rightly doubts, and solves his doubts from those things which are usually asserted by the Pythagoreans. For this indeed, says Syrianus, is the monad which ranks as a principle, and corresponds to the divine monad which the Pythagoreans call the first number in all things, and the summit of all forms and all figures. But the other monad is that which becomes the subject of numbers, and which the Pythagoreans defined to be the least in quantity, and the first in generation though not in essence.

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this. Indeed, as matter, the acute angle, an element, and the monad are prior ; but, considered with relation to form, and an essence according to definition, the right angle, and the whole composed from matter and form are prior : for both are more proximate to form, and to that to which definition belongs, but they are posterior in generation. How, therefore, is *the one* a principle* ? Because, say they, it is not divisible, but indivisible, both that which is universal, and that which is particular, and also that which is an element ; but in a different manner : *the one*, indeed, according to definition, but the other according to time. After what manner, therefore, is *the one* a principle ? for, as we have said †, the right appears to be prior to the acute angle, and the acute to the right angle, and each is one. But, according to both ‡ these modes, they make *the one* a principle. Still, however, it is impossible : for this is as form and essence, but that as a part §, and as matter : for each is in a certain respect one ||, in reality indeed, in capacity ; if, indeed, number is one certain thing,

* Aristotle here inquires what this *one* of the Pythagoreans is ; whether it is that which ranks as a principle, or that which is the least in quantity. Syrianus here informs us, that according to the Pythagoreans, there is a difference between *the one* and the *monad*, το εν και η μοναδ ; and that this was a subject of discussion to many of the more ancient philosophers of that sect, among whom is Architas, who says, “ that *the one* and the *monad*, though of a kindred nature, differ from each other.” He likewise informs us, that this subject employed the attention of those junior Pythagoreans, Moderatus and Nicomachus. But Aristotle, for the purpose of concealing his design, passes from the *monad* to *the one*, as if these two were one and the same. See more on this subject in the annexed Dissertation.

† That monad which completes the essence of numbers, by subsisting as a subject, when considered as analogous to an acute angle, is said to be both prior and posterior to number ; posterior indeed in essence, but in generation more antient.

‡ We reply, But not after the same manner. For that monad which ranks as a principle is a principle in every respect, as being the cause of wholes ; but that monad which is the least in quantity is a principle in the same manner as an acute of a right angle.

§ That is to say, it is as a part and as matter, so far as it is subject to numbers.

|| Aristotle here speaks both according to truth, and the opinion of the antients. For, if number is not a heap of monads, but each is composed from so many monads as subjects, but consists through its own form, the monad in the duad will be nothing in energy till it is invested with its proper form. It is here, therefore, requisite to observe, that neither is Aristotle of opinion that number is a co-acervation of monads, nor that monads, in short, are any thing in energy till they are adorned by forms. For though, for the sake of concealment, he assumes that, according to the Pythagoreans, that which is in capacity is not only prior in generation and time to that which is a whole, and has a specific distinction, but also in definition and

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essence ;

thing, and not as a heap, but, as they say, different numbers subsist from different monads. But the monad is not each of these in energy. The cause, however, of the accidental error is this, that they investigate at the same time from mathematical natures and universal reasons; so that, from those as a point, they have placed *the one* and the principle: for the monad is a point without position. As, therefore, certain others have composed beings from that which is least, so also they. So that the monad becomes the matter of numbers, and at the same time prior to the duad. It is, however, again posterior, the duad subsisting as a certain whole, as one, and as form. But, in consequence of their investigating a universal predicated one, they speak of it as of a part. It is, however, impossible that these should subsist at the same time in the same thing. But if it is requisite that *the one itself* should alone be without position (for it differs in nothing, except that it is the principle, and that the duad is divisible, but the monad not)—if this be the case, the monad will be more similar to *the one*. But if the monad alone is without position, *the one* will be more similar to the monad than to the duad; so that in either case the monad will be prior to the duad. They do not, however, assert this; for they generate the decad the first. Lastly, if the duad itself is one certain thing, and also the triad itself, both are a duad. From what, therefore, does the duad itself consist?

CHAP. IX.

BUT some one may doubt, since there is no contact* in numbers, whether the first monad in the duad or triad is placed in an order consequent to

essence; yet, if we observe in reply, that according to those divine men there are two monads, one of which ranks as a principle, and the other as a material subject, we shall then speak sufficiently, both with respect to truth and the concord of the antients.

* The properties of mathematical monads, as we have often observed, are not to be transferred to ideal number; but, if what Aristotle now says is directed against mathematical number, we may reply, that the monads which subsist in different numbers analogous to matter, are not consequent to any thing, since neither are they essentially in energy: but when they are invested with the form of their proper number, then they become consequent to each other. The monads, however, in another number, must by no means be said to be consequent to these, but rather the numbers which are placed in a natural order should be said to succeed to each other.

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the one, or not; and whether the duad is prior to the monads which are in a consequent order, or whether this is the case with any kind of monads. In like manner, these difficulties take place in the posterior genera of number, of a line, a superficies, and a body: for some make lengths from the species of the great and the small, as it were from the long and the short; but superficies from the broad and the narrow, and bulks from the profound and the low. But these are the species of the great and the small: but others differently place among things of this kind, that principle which subsists according to *the one*. And in these also ten thousand impossibilities, fictions, and things contrary to all rational assertions appear. For it happens that they will be liberated from any connection with each other, if the principles also do not at the same time follow; but if the principles co-exist, a line will be the same with a superficies, and a superficies with a solid.

Further still: how can angles*, figures, and things of this kind be assigned? The same thing also happens to the particulars respecting number†. For these are the passions of magnitude: but magnitude does not consist from these, as neither does length consist from the straight and the curved, nor solids from the smooth and the rough. To all these, however, the same doubt

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* Aristotle here inquires how the Pythagoreans can any longer produce these things from the monad and indefinite duad. For what, says he, is there in these transcendent, and what deficient? In angles indeed, it is easy to reply, that the right angle subsists rather according to the monad, but the acute and obtuse, according to the indefinite duad, in which exuberance and defect are most apparent. Of figures also, those which are characterised by equality, sameness, and similitude, have a greater relation to the monad; but those in which inequality, difference and dissimilitude are predominant, are more allied to the duad. In short, every figure subsists from these two principles: for the sphere, circle, equilateral triangle, square and cube, participate of the duad by their quantity, and their possession of interval. And again, beams of timber, altars, scalene triangles, and oblong figures, accord with the monad, from which they receive their form. Nevertheless, as we are accustomed to say in numbers, that every number subsists from these two principles, but that the odd number is rather characterised by the property of the monad, but the even by the property of the duad; after the same manner, in angles and figures, we affirm that they all indeed subsist from these two principles, but that some are more assimilated to the monad, and others to the duad.

† As the odd and the even are the essential properties of numbers, in like manner the circular and the straight are the essential properties of length; the narrow and the broad of depth; and the high and the low of depth. But, as these properties do not subsist in their subjects without a cause, it is evident that they proceed from an accommodated principle. And when, indeed,

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is common*, which happens to species considered with relation to genus, when any one admits universals; viz. whether animal itself is in animal, or something different from animal itself: for this not being separate produces no doubt; but if separate, as those say who make these assertions, it is not easy

they are united to their subjects with rectitude and permanency, they rather proceed into them from unity, as the right in angles: but if they are beheld with exuberance and defect, they subsist together with the more and the less, and receive these from the indefinite duad. Neither, therefore, did the Pythagoreans call the passions or participated properties of magnitudes, the principles of magnitudes, but rather those things from which these are imparted to magnitudes, and of which there is one fountain, viz. their proper indefinite duad.

* In answer to the apparent objection of Aristotle, that many impossibilities will follow, if we admit that universals have a subsistence separate from sensibles, we may reply, that in every individual of the human species the common nature of man is apparent; that animal also is beheld in lion and horse, and man and dog; the pentad in the five fingers, and the duad in the nostrils, the eyes, hands and feet. But, since these do not subsist without a cause, but receive their perfection from certain definite natures, it is altogether necessary that there should be some animal in the whole of nature, separate from sensibles, through which this which is sensible is generated: and, still further, that there should subsist in nature a pentad through which the hands are always adorned with so many extremities, and a duad from which the two eyes and nostrils proceed. But if neither nature possesses these from herself, but they are imparted to her from another cause, as they also emanate from her into matter, it is necessary that there should likewise be universals and numbers prior to nature, and which subsist in a superior manner. For neither does nature possess these in the same manner as she imparts them to matter; since in matter they subsist accompanied with interval, and distended with bulk: but in nature they subsist indivisibly, and with efficacious energy (*δυστοκως*). In soul they subsist still more simply and immaterially; and in that which is superior to soul, they possess, through transcendence of essence, the prerogatives of ideas. Nevertheless, it must here be observed that Aristotle rightly asserts, that universals and numbers are at the same time separable, or at the same time inseparable, from which many other conclusions may be deduced: for, whichever of these you approve, you must conclude the other. This also is rightly asserted by Aristotle, *That if there are ideas, numbers are ideas*. For his reasoning is, that if there are universals there are ideas; and we admit the conclusion; not that universals are ideas, for how is this possible? since the former subsist in soul, but the latter in intellect. But we admit the conclusion, because, since there are forms involved in the folds of matter, there are also forms more indivisible than these, and which have a more principal subsistence. If numbers, therefore, have a separate subsistence, there are universals; but if there are universals, there are ideas; if numbers are separate, ideas also are separate. As, therefore, he who admits that forms are separate, will not cease in his ascent till he arrives at the most simple forms, which are no longer secondary to others, but have a primary subsistence from themselves; so he who admits the existence of separate number, will not stop in his sublime career, till, arriving at the luminous region of ideas, he perceives their profound union with numbers. For monadic numbers possess quantity separated from form; but in divine numbers the whole is form.

to solve the doubts respecting *the one* and numbers. But, if not easy, it is requisite to say that it is impossible: for, when any one understands *the one** in the duad, and universally in number, whether does he understand some particular thing itself, or something else? Some, therefore, generate magnitudes from matter of this kind, but others from a point, (but a point appears to them not to be *the one*, but to possess a like quality with *the one*) and another matter such as is multitude; concerning which it happens that the same doubts no less arise: for, if the matter is one †, line, superficies, and solid are the same; for, from the same things there will be one and the same thing: but if the matters are many, and there is one matter of a line, another of a superficies, and another of a solid, they either follow each other, or they do not. So that thus also the same things will happen: for either a superficies will not have a line, or it will be a line. Further still ‡: no one endeavours to explain how it happens that number subsists from *the one* and multitude. But in whatever manner they speak, the same difficulties take place which also

* *The one* in the duad indeed is derived from that monad which ranks as a principle; but *the one* in number does not proceed from that monad which is material: for material monads are not different from each other.

† In the first place, indeed, the other of the principles is not as the matter of magnitudes, but as that which gives subsistence to matter. And in the next place, what necessity is there that, one matter existing, the same things should be effected from it? For the difference will arise from the forming cause, as in the mundane elements: for fire, air, water and earth have the same matter, but are evidently not the same with each other. A syllable also, a word, and a sentence, employ the same subjects; for the elements of speech are the matter of all these; and yet some of these are more simple, and others more composite. To which we may add, that no one of the more composite can subsist without the more simple, as neither can body subsist without superficies and line; but the more simple may be considered as subsisting by themselves; as, for instance, a line.

‡ Both those who make the other of the principles to be multitude, and those who denominate it the duad, speak of the same thing under different names: for, neither is a multitude of this kind such as is that which is generated, nor did the Pythagoreans consider the duad itself as the same with that duad which is a certain multitude, but as that which is generative of quantity, and derives its specific distinction from the monad. But Aristotle here plainly shows that he is not serious; for, though the inquiry at present is respecting things which are void of position and contact, and which are immaterial, yet he asks whether we ascribe the continuity of numbers to mixture, or position, or temperament, or generation; which modes are evidently rude and inartificial, and do not even apply to those numbers which are more proximate to bodies: for it is manifest that each of these derives its subsistence from its proper form, and through this form is assimilated to the monadic principle of numbers.

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happen to those who assert that number consists from *the one* and the indefinite duad: for one generates number from predicated universal, and not from a certain multitude, but another from a certain multitude, yet that which is first; for, according to them, the duad is the first multitude. So that, as I may say, there is no difference with respect to the difficulties that take place, but the same doubts follow, whether mixture, or position, or temperament, or generation, or any thing else of this kind is adopted. But especially it may be inquired *, if each monad is one, from what it subsists: for each will not be *the one itself*. It is necessary, however, that it should either be from *the one itself*, and multitude, or from a part of multitude. To say, therefore, that the monad is a certain multitude is impossible, since it is indivisible. But to say that each monad is from a part of multitude, is an assertion attended with many other difficulties; for it is necessary that each of the parts should either be indivisible, or be multitude, and that the monad should be divisible, and *the one* and multitude not be an element; for each monad is not from multitude and *the one*.

Again: he who says this, does nothing else than make another number: for multitude is a number of indivisibles. Further still †: it may be inquired
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* Aristotle rightly inquires whence each of the material monads subsists. He also rightly denies, that the material monad is the same with that which ranks as a principle, and which he calls the monad itself. We also have asserted the same. It is, however, by no means necessary, that the remaining part of what he says should follow: for, neither do we say that this monad subsists from a part of the duad; since every principle is indivisible in multitude: nor, if it subsisted from the duad, would it on that account be multitude; for the duad itself is not multitude. We must say, therefore, in reply to the first interrogation, that this monad subsists indeed from that cause which generates the subject of numbers, viz. from the duad, but that it also derives something from that monad which ranks as a principle, as Aristotle himself now admits, and subsists from the great principles of things. We must further say, that the duad is not divided, and that number will not be in it prior to numbers, but that it contains the cause of the matter of numbers. The same doubts may also be urged respecting the matter of things capable of being generated, and the doubts may be solved by answers of this kind: for, if he asks whether this matter subsists from multitude or *the one*, we must say that it proceeds indeed from the same productive and infinitely powerful duad; but that it also receives a resemblance of a more excellent principle, so far as it is in a certain respect said to be one, and so far as it is dissimilarly assimilated (*ανωμοτως ομοιεται*) to *the one*.

† Aristotle does not at present inquire concerning numbers, whether they are finite or not; for this he had proposed before; but respecting the multitude in the duad, from the division of which
he

of those who speak in this manner, whether number is infinite or finite: for the multitude also, as it seems, was finite, from which and *the one* finite monads were produced; and multitude itself is different from infinite multitude. What kind of multitude, therefore, is an element and *the one**? In like manner, it may be inquired respecting point and element †, from which they make magnitudes: for there is not only one point itself. From what, therefore, does each of the other points consist? For it does not consist from a certain interval, and the point itself. But neither does it happen that indivisible parts are the parts of interval, as they are of the multitude which consists from monads: for number is composed from indivisibles, but this is not the case with magnitudes. All these, however ‡, and other such like particulars render it evident, that it is impossible for number and magnitudes to have a separate subsistence. Further still: since the first authors of these hypotheses disagree respecting numbers, it is a sign that these things not being true are the sources of confusion to them. For some, making mathematical species § alone besides sensibles, and perceiving the difficulty and

he supposed monads to be generated. But his meaning is evident from the conclusion. We must say, therefore, that discrete multitude by no means subsists in the duad; and that the duad is for the most part called multitude, as possessing, and containing in itself, a cause generative of multitude.

* For ποιον ουν πληθος και στοιχειον εστι το εν; read ποιον ουν πληθος και στοιχειον εστι και το εν;

† To inquire, indeed, whence many points and magnitudes derive their subsistence, is the business of a philosopher. The true solution, therefore, of the question is this; that the multitude of points in a line correspond to material monads. Hence, they possess indeed a cause productive of matter, but they also receive a resemblance of a specific and formal principle. But magnitudes possess their divisions from the other of the principles, or the duad, which generates matter; but their ratios from the monadic principle. Neither, therefore, is it requisite to call interval the generative principle of interval, nor to understand points as parts of interval, not only because the parts of dimension are not impartibles, but because neither is distance the other of the principles; nor, in the duad which gives subsistence to multitude, do we say that the monads which it contains are the causes of externally ingressive monads.

‡ It has, I think, been sufficiently demonstrated, that none of these objections oppose the real dogmas of the Pythagoreans. "It is also manifest, says Syrianus, that neither if any one should accumulate an infinitely infinite number of such objections, could he shake the truth itself from the intellect of the more prudent."

§ We have already observed that the followers of Hippasus, to whom Aristotle now alludes, venerated ideal number; though, in conformity to other Pythagoreans, they called such number by mathematical names, and thus gave occasion to others to assert, that, separating themselves from the first and better species of number, they directed the whole of their attention to that which is secondary and subordinate.

fiction

fiction respecting forms, abandoned formal, and introduced mathematical, number. But others, being willing to make forms at the same time and numbers, and not perceiving how, if any one adopts these principles, mathematical number can subsist besides the formal, made formal and mathematical number to be the same in definition. But since the mathematician is entirely withdrawn in their assertions, they introduce peculiar, and not mathematical, hypotheses. However, he who first adopts forms and numbers, rationally separates forms and mathematical entities; so that all of them in a certain respect speak rightly, but not entirely so. They likewise do not accord with, but speak contrary to, each other; the cause of which is this: that their hypotheses and principles are false. But it is difficult, according to Epicharmus, to speak well from things which are not well presupposed: for in this case, as soon as any thing is said, it immediately appears not to be well said. But, with respect to numbers*, the doubts already enumerated and the things already determined are sufficient: for he who is persuaded by what has been said, may yet be more persuaded by more numerous arguments; but nothing further can be urged to persuade him who is not yet persuaded.

But with respect to first principles, and first causes, and elements, such things as are asserted by those who alone employ themselves about a sensible essence, have been partly mentioned by us in our Physics, and what further remains to be said respecting them does not belong to the present inquiry. But such things as are asserted by those who introduce other essences besides

* Our philosopher, says Syrianus, very rightly conjectures, that though as many jocular objections against the admirers of ancient philosophy should be composed without end, they would effect nothing: for all his arguments are directed against numbers composed from monads; but no divine number is of this kind, but perhaps mathematical number alone. Syrianus adds, that Aristotle, according to his own confession, has said nothing against the hypotheses of the Pythagoreans, nor, in short, against ideal numbers, if they are different from mathematical numbers. For in his second book On Philosophy (a work unfortunately no longer extant) he says: "wherefore, if ideas are numbers of a different kind from such as are mathematical, we shall have no conception of them." Hence, his arguments are now directed against those who know of no other number than that which is composed from monads, but not against the conceptions of those divine men the ancient Pythagoreans.

Syrianus adds, that some consider this book as ending here; and therefore, as what follows regards the third question, they distribute it in the fourteenth book. Nevertheless, says he, many books have the division adopted by Alexander: and this division, which Syrianus also follows, has been retained by all succeeding ages.

sensibles,

sensibles, form speculations consequent to what has been said. Since, therefore, some assert that there are such like* ideas and numbers, and that the elements of these, are the elements and principles of things, let us consider what they say, and how they speak respecting these; reserving for an after speculation the opinions of those who alone introduce numbers, and these such as are mathematical. But of those who assert that there are ideas, some one may at the same time perceive the mode, and the doubts which take place respecting them: for at the same time they make ideas to be universal essences, and again they consider them as separate, and as particulars. But, that these things are not possible, we have already doubted. The cause †, however, which induced those who call ideas universals, to consider

* The Pythagoreans and Plato considered ideas as essences, according to a transcendence with respect to individual or partial essences; and asserted that they are more comprehensive than universals, and contain in profound union the causes both of universals and individuals. Hence, ideas are neither universal after the manner of the reasons or productive principles of soul, nor indivisible and one in number, according to the resemblances of last images.

† We have already observed, that neither did the ancients arrive at ideas by following the doctrine of Heraclitus, nor did Socrates think that there were no other universals than such as are inseparable from particulars. But, since Aristotle manifestly acknowledges that science cannot be possessed without universals, we may inquire of him what universals he means: for, if such as are inseparable from particulars, these are indeed parts of sensibles, and are neither prior nor posterior to them. But Aristotle very properly asserts that demonstrations and sciences are acquired from causes, and things which have a priority of subsistence; and this not only in his *Last Analytics*, but in what he has a little before said, "that the universal which is predicated, is different from that which subsists in an individual as a part, and can never become one and the same with it." If, therefore, all demonstrations are from predicated universals, they can by no means be formed from the universals inherent in sensibles. Besides, if demonstrations subsist through inseparable universals, where will be the demonstrative power which they possess? For those who consider the things through which demonstration subsists as separate from particulars, at the same time demonstrate from causes, and are able to demonstrate things demonstrable, since they both subsist in separate causes, and in such as are inseparable, but have a more universal subsistence. But if we consider the things from which demonstrations are composed as separate indeed, but of posterior origin, and void of essence, as man subsisting in our phantasy or opinion by an abstraction from sensibles, thus again, demonstrations will neither be from things prior and causes, but from things posterior and caused; and besides this, we shall know beings themselves through non-entities, which of all things is the most irrational. If, therefore, we wish to be consistent both with ourselves and things, we must place physical reasons (i. e. productive principles) in sensibles, but we must establish prior to these the conceptions of our soul, considering beings through universal reasons, from which demonstration and every kind of science originate: and again, above these, that ideal essence which subsists

consider both as one and the same thing, was because they did not make them to be the same essences as sensibles. Particulars, therefore, which are in sensibles, they considered as having a flowing subsistence, and that none of them had any permanent essence; but that there was universal besides these, and that it was different from them. But this, as we have before observed, excited Socrates through definitions, yet he did not abstract from particulars; and by thus not abstracting he conceived rightly. The truth of this, indeed, is evident from operations: for without universals science cannot be attained. But to separate them from sensibles is the cause of the difficulties which take place respecting ideas. But others*, as if it were necessary that, if there are certain essences beside a sensible and flowing nature, they should have a separate subsistence, not having any others, introduced these which are called universals. Hence it happens that universals and particulars† are nearly the same natures. This, therefore, will itself be a certain essential difficulty, with which the above-mentioned particulars are attended.

C H A P. X.

BUT, as we observed‡ in the doubts which we enumerated before, that both the assertions of those who contend that there are ideas, and of those who

in the sacred and all-splendid recesses of intellect, and has dominion over all things. Of the objections which have been made to these divine dogmas, both by antients and moderns, some are those of men intellectually blind, and others are easily confuted.

* Though the Platonists were most rich in names, yet, because the progression of beings possesses images of first natures, in the last orders of things, they principally accommodated these names to divine natures, but secondarily and with diminution to sensibles.

† A sensible nature does not become the same with those intelligibles of which it possesses the images; for an effective and paradigmatic cause is very different from that which is perfected by, and according to, it. But, if last natures are assimilated to such as are middle and first, what absurdity will there be in using the same names in all these? For Aristotle himself in the twelfth book of this work calls the first god an animal, as well as that which is sensible and painted.

‡ If it be requisite, says Syrianus, that, attending to the meaning of the philosopher, we should despise verbal ambiguity, he appears to me to reject the destruction of separate essences, lest at the same time he should subvert the existence of a sensible essence, and this very prudently and consistently with himself. For, in his Physics, he shows that unless there is something which possesses infinite power, there will be nothing endued with finite power. Again: It will be possible (says he) that a separate essence should appear to Aristotle to be infinite, because,

who contend that there are not, are attended with a certain doubt, we must now also repeat the same observation. For he who does not admit that there are separate essences, and that particulars are as it were after this manner the subject of discourse, subverts,

because, if any one supposes the principles of it to be individuals, he must assert that there are as many principles as beings: for he will behold them as elements, and will not leave any science of them; since there is no science of particulars, as demonstrations and definitions evince. But if the principles of a separate essence are universals, it is not reasonable that these principles should be unsubstantial, while individuals have a real subsistence. He adds: But let universal appear to Aristotle to be unsubstantial, we again say, that the principles of ideas are neither individuals, nor universals of such a kind as the forms which are in soul, or in nature, or in sensibles, or as resemblances of posterior origin, which last among universals may be justly considered as unsubstantial; but they are prior to all these, subsisting as the causes of wholes, and being entirely exempt from the nature of their effects: for neither are other ideas, which proceed from these, individuals, or universals. Indeed, as that which is individual is material, but universal is in soul, so that which is entirely impartible is intellectual.

But in answer to what Aristotle says, that as the elements of speech make infinite words, though they are inseparable from speech, in like manner the principles of beings operate, since they are inseparable from the sensible essence of individuals, we may reply, that in the first place, the Pythagoreans did not introduce a monad and duad of this kind; and, in the next place, as our intellect and phantasy transmute the elements of speech, and produce different words by a certain transposition, we may ask what that nature is in the universe which transposes the elements, and preserves an eternal generation of things? For, if it is something worse than intellect, we must be careful that we do not, on this hypothesis, make parts more excellent than wholes, accidents than essences, things mortal than things divine, and things which always energise after the same manner with perfect rectitude, than those which are rarely right in their energies; if we assert indeed, that our actions are the progeny of intellect, but that natures which rank as wholes are not governed by reason. But if some intellect transposes these, is it intellect in capacity, or in energy, or is it that which is both? It is manifest, indeed, that if it operates essentially, or from its very essence, it both possesses in itself the cause of its productions, and gives subsistence to images of itself; for of this kind are all things which energise essentially. But if it energises from free-will and transitive intellection, (*προαιρεσει και μεταβατικη νοησει*) we may ask what are the orderly disposed and bounded natures in its essence, which it looks to in its energies? For it cannot be supposed in its productions to energise with astonishment, (*εκπληκτικως*) or inconstantly, as we do in our operations; but, according to either mode, it will contain in itself the ideas of its productions: for neither would it be possible for us from four-and-twenty terminated elements of speech to produce infinite words, unless we also contained in ourselves the idea of each of them, and principles productive of the composition of them all. For why have irrational animals shorter words enunciative of their peculiar passions? But man, employing infinite permutations, never ceases from composing the several letters.

Again: If Aristotle is serious in saying that science is of universals in capacity, but of particulars

SUBVERTS, AS WE WILLINGLY ALLOW, ESSENCE ITSELF. But yet, if any one admits that there are separate essences, how will he establish the elements and principles of them? For if these are particulars, and not universals, there will be as many beings as there are elements, and the elements will not be the objects of scientific knowledge: for, let the syllables in a word be essences, but the elements of them the elements of essences: but it is necessary that *ba* and each of the syllables should be one, if not universally indeed, and the same in species, yet each must be one in number, and this particular thing, and not homonymous. Further still: each one is considered by them as the very thing itself: but if syllables, so likewise the things from which they are composed. There will not, therefore, be more than one letter *a*; and for the same reason, each of the other elements will only be one, as neither of the other syllables will the same syllable be in different words. But, indeed, if this be the case, there will be no other beings than elements, but things will be elements alone. Again: elements will not be the objects of scientific knowledge; for they are not universals, but the objects of science are universals. But this is evident from demonstrations and definitions: for the syllogism will not be, that this particular triangle has angles equal to two right, unless

particulars in energy, he subverts what he has said in his First Analytics, that it is not possible there can be sciences of particulars, and much less can there be the more excellent and perfect science of universals. And, as it seems, the first mode of the first figure, which concludes from two universal affirmatives, and which he says possesses the greatest demonstrative power, will not produce a perfect conclusion, nor that which produces science in energy; but those syllogisms will be more perfect which conclude from a universal and particular affirmative, especially if the minor proposition is of particulars. That sense, therefore, is principally employed indeed about that which is individual, but accidentally about that which is common in the individual, may be granted; but it is false, that grammar on this account is principally conversant with this particular *a*, but from accident about *a* which is common. For arts are more conversant with universals than particulars; since they produce and judge of particulars, in consequence of possessing the causes of that which is common. For a physician knows how to heal man, and not Callias; but when he energises together with matter, he heals an individual, because he previously comprehended in himself the universal producing principles of health. The grammarian also knows the power of the letter *a*, when it is attenuated and aspirated, and when it is shortened and lengthened, when it is taken separately, and when it is composed with others; prepositively indeed in vowels, but subjunctively (*ὑποτακτικῶς*) in consonants. But when he is willing to pronounce it, or to judge of the pronunciation of another person, then he energises about the individual, because he has previously received the producing principles of universal itself.

What has been now said of the arts, which differ in this from experiments, that they know the

less the same conclusion is true of every triangle; nor that this man is an animal, unless every man is an animal. But yet, if principles are universals, or if the essences which subsist from these are universals, non-essence will be prior to essence: for universal is not essence; but element and principle are universals. But element and principle are prior to the things of which they are the element and principle. All these consequences, therefore, rationally happen, both when they make ideas from elements, and when, besides ideas and essences which have the same form, they think fit that there should be a certain one which has a separate subsistence. If nothing, however, hinders, but that, as in the elements of speech, there is a multitude of the letter *a*, and a multitude of the letter *b*, and *a* itself and *b* itself are nothing besides the multitude of these, on this account there will be infinite similar syllables. But that all science is of universals, so that it is necessary the principles of things should be universals, and should not be separate essences, this is attended with a greater doubt than any thing which has yet been said. In a certain respect, however, that which is now asserted is true, and in another respect it is not true: for science as also scientific knowledge is twofold; of which one is capacity, but the other energy. Capacity, therefore, being as it were the matter of that

the causes of their operations, in the highest degree accords with Aristotle himself, who manifestly proclaims in his books on Rhetoric, that no art considers that which is particular. "Thus, (says he) medicine does not consider what is salubrious to Socrates or Callias, but what is so to this or that person, or to these; for this is the province of art." "But that which is particular (says he) is infinite, and is not the object of scientific knowledge." But when we ascend to those sciences which have no connection with any thing sensible, but are alone conversant with impartible and immaterial forms, how is it possible to conclude respecting these, that they are not principally employed about universals, but about individuals?

Nor must what Aristotle says in the end be admitted simply, and without addition. "For if (says he) principles are universals, those things which subsist from them will also be universals, as in demonstrations." But it may be said, that in demonstrations the material principles are the propositions which produce the conclusion not abiding in themselves, but giving themselves up to the fabrication of the thing proposed to be demonstrated. In effective principles, however, it is not necessary that the things which are generated should be co-extended with their causes. Unless, perhaps, we are willing to say that those universals which proximately proceed from universal principles themselves, and which are essentially contained in soul, are principally generative of the reasons of nature; but, proceeding through the reasons of nature to matter, are productive of individuals. Thus, universal propositions principally conclude, that the angles of every triangle are equal to two right; but propositions less universal conclude this equality of angles to two right, of some particular species of triangle: and those still less universal conclude this of some individual triangle in a diminished and ultimate degree.

which

which is universal and indefinite, is the capacity of the universal and indefinite ; but energy being definite has also a definite object, being something particular of something particular. But sight perceives accidentally universal colour ; and the grammarian speculates this particular α . Since, if it is necessary that the principles should be universals, it is also necessary that the things which subsist from them should be universals, as is evinced in demonstrations. But if this be the case, nothing will have a separate subsistence, nor even-essence itself. It is evident, however, that science is in a certain respect of that which is universal, and in a certain respect not.

ARISTOTLE'S

ARISTOTLE'S METAPHYSICS.

B O O K XIV.

C H A P. I.

AND thus much, therefore, respecting this essence. But, as we observed in our Physics, that all philosophers make principles to be contraries, the like is also true concerning immoveable* essences. However, if it is not possible that any thing can be prior to the principle of all things, it will be impossible

* Aristotle in what he now says apparently opposes those who make the principles of things immoveable to be contraries, just as he does not think it improper to assume for the principles of sensibles, contraries, together with their subject. But he thus syllogizes after his usual manner: Contraries are in a subject; principles are not in a subject, lest there should not be essence prior to a subject; contraries, therefore, are not principles. To which it may be replied, that the Pythagoreans did not assume in principles contraries which are not essential, as being subordinate to essence, but as being more excellent than essence. For it is requisite that the principles of essences should be superessential; since if the great principle of all things is superessential, as Plato demonstrates him to be, in his Parmenides, and the sixth book of his Republic, it is necessary that his immediate progeny should be superessential also in a secondary degree. But, in short, neither did the Pythagoreans begin from as it were opposites. And that they knew (says Syrianus) that principle which is beyond the two elements the monad and indefinite duad, is testified by Philolaus, who says, "that God gave subsistence to *bound and infinity*," which two, as we have often observed, are the same as the monad and indefinite duad. Syrianus adds, that this great principle, which is prior to bound and infinity, and is abstracted from all things, was called by Archææctus a cause prior to cause; but by Philolaus,

impossible that the principle being any thing else should be the principle of all. Just as if any one should say that a thing white is the principle, not so far as it is something else, but so far as it is white, which yet according to its subject is white, and at the same time something else: for that will be prior. But, indeed, all things are generated from contraries as from a certain subject. It is therefore especially necessary that this should take place in contraries. Hence, all contraries pertain to a subject, and none of them has a separate subsistence. But, as it appears, nothing is contrary to essence; and reason testifies the truth of this assertion. No one, therefore, of contraries is properly the principle of all things; but something different from these. But according to some, the other of contraries is matter*. According to others, the unequal is contrary to *the one*, that is to *the equal*, as if this were the nature of multitude. And again: according to others, multitude is contrary to the one: for numbers are generated by some from the unequal duad, viz. the great and the small, but by a certain person† from multitude; by both, however, from the substance of *the one*: for he‡ who calls the unequal and

Philolaus, the principle of all things; and by Brotinus, that which transcends every intellect and essence both in power and antiquity (*ὡς τοῦ παντός καὶ οὐσίας δυνάμει καὶ προεστία ὑπερχει*). Hence the divine Plato speaks to the same effect in his Epistles, in his Republic, and in his Philebus and Parmenides. Aristotle, therefore, in what he now says cannot be serious, since the propositions are not sound: for principles if they are contraries are not in a subject; supernal natures are by no means unsubstantial; nor are principles essences. For principles properly so called, and which are the principles of all things, are superessential. Nor does his conclusion confuse any dogma of the Pythagoreans: for, as we have before observed, they did not begin from things which are as it were opposites, but they placed at the summit of things *the one*, which they considered as transcending both principles and elements.

* Neither, says Syrianus, do the Pythagoreans call the duad which is prior to all numbers a material cause; for divine numbers are not indigent of matter; nor does Plato, when he demonstrates the indefinite duad through *inequality*, differ from Pythagoras, who demonstrates the same through *multitude*. For each endeavours to denominate it from those things which, through it, are inherent in numbers. But it has been already observed, that this duad is the cause of multitude, and progression, prolific power, and diversity; in the same manner as the monad is the cause to divine forms of identity, and eternal permanency: for *eternity*, says Plato, *abides in one*; by the appellation of *one* signifying the monad of the Pythagoreans, which is the cause of eternal permanency in the same things, and after the same manner.

† Viz. Pythagoras.

‡ Plato, says he, ought to assert that these are two in definition, but one in number: for Syrianus observes that it is better thus to explain the meaning of Aristotle, than as it is explained

and *the one* elements, but the unequal from the small and the great the duad, speaks of the unequal, the great and the small, as if they were one, nor does he clearly assert that they are so in definition, but not in number. Nor yet do they well explain the principles which they call elements*. For some, introducing the great and the small together with *the one*, assert that these three are the elements of numbers; the two first indeed, having the relation of matter, but *the one* of form. But according to others, the much and the few are elements, because the great and the small are naturally more allied to magnitude. According to others, again, the elements are things more universal in these, viz. the surpassing and the surpassed. But no one of them differs, as I may say, with respect to certain things which take place, but only with respect to logical difficulties which they defend, because they also introduce logical demonstrations. Indeed an instance of this may be seen in their assertion, that principles are the surpassing and the surpassed, but not the great and the small, and that of the elements, number is prior to the duad: for both are more universal. But now they assert the one, and not the other. Others again, oppose to *the one* that which is different and another. But others introduce as principles, multitude and *the one*. But if beings are from contraries†, as they are willing they should be, but to *the one* either nothing

plained by Alexander. However, Plato did not call the other of the principles, the unequal and the duad, the great and the small, in the sense adopted by Aristotle, conformably to his concealed mode of writing. But, as we have often observed, this principle according to Plato is the cause of multitude and progression, and generates every thing great and small. And, in short, if this principle by an ineffable transcendence is separated from the great and the small proceeding from it, and is better than every subject, (for such is the truth of the case,) what place can there be for such assertions as the present?

* All these, says Syrianus, according to the opinion of Aristotle, call the more divine and paternal principle of numbers, the monad; but the maternal is called by some, as by Plato, the great and the small; by others, correctively (*επιδιορθουμενως*), the much and the few; by others again, recurring to that which is more general, the exceeding and excess; by others difference; and by others multitude. But we have already shown that all these appellations signify the same thing. And, in answer to what he says against the patrons of ideas (*των ειδικωτερον*), that they make number prior to the duad, we reply, that if he means the indefinite duad, or, as we have often observed, the second of those two great principles after the ineffable cause of all, it is impossible that number can be the genus of it, because number is its offspring; but, if he means the duad itself, this ranks as the first among ideal numbers.

† Nothing can more plainly evince that Aristotle is not serious in what he now asserts than this, that he contradicts what he has said in the tenth book of this work; for he there clearly

nothing is contrary, or, if there be, it is multitude; but the unequal is contrary to the equal, difference to sameness, and that which is another to that which is the same,—if this be the case, those who oppose *the one* to multitude, have something to urge in defence of their opinion: yet neither is their hypothesis sufficient: for *the one* will be few; since multitude is opposed to paucity, and the much to the few. But, with respect to *the one*, it is evident that it signifies measure*. And in every thing there is a certain other thing which ranks as a subject; as for instance, in harmony, diesis; but in magnitude, a finger, or foot, or something of this kind; but in rhythms, the basis, or a syllable. In like manner, in weight, there is a certain definite

asserts that the few is not contrary to every multitude, but to that which transcends; and that *the one* is not contrary to multitude and number, but is rather relatively opposed. So that, according to his own opinion, both the propositions are false, through which he collects the conclusion of his confutation; viz. both that which says that *the one* is contrary to multitude, and that which considers every contrary to multitude to be the few. To which we may add, that his objections are not directed against *the one* which the Pythagoreans establish, nor does he consider multitude conformably to their doctrine.

* “As those divine men, (the Pythagoreans) says Syrianus, called God *the one*, as the cause of union to wholes, and as beyond every being, all life, and all-perfect intellect; and, besides this, denominated him the measure of all things, as illuminating essence and end to all things, and as comprehending and bounding all things by his ineffable transcendencies (*ὑπεροχάς*), and which are expanded above all bound†, this daemoniacal man, directing his attention to that one which is the least in quantity, and on account of its parvitude is the common measure of all things of the same kind, affirms that there is neither any measure, nor one, which does not subsist in a subject. Hence, his discourse falling from the one principle of beings, or the unity immediately connected with it, as from a certain divine foundation, subverts the whole discussion of incorporeal natures. It is worth while therefore, says he, to compare with the assertions of Aristotle, what is said by Clinias the Pythagorean, who affirms that *the one* is perfectly exempt not only from bodies and mundane natures, but from intelligibles themselves; and who, venerating the principle of beings, says that he is the measure of intelligibles, that he is unbegotten, eternal and alone, that he is the sovereign ruler, and that himself unfolds himself into light. To this we may add the words of the divine Plato in his Laws, in which he calls God the measure of all things, as comprehending in himself the beginning, middle, and end of all beings.”

But, that Aristotle was of the same opinion in this respect, with those who philosophised before him, is evident from the second book of his Politics; for he there openly says, “that *the good* is the most certain measure of all things.” So that it is evident, as Syrianus well observes, that his arguments are rather logical than serious.

† Τὸν οὖν οὐρανὸν οὐ μὴν λέγουσιν τὸν θεὸν ὡς πρῶτον τῆς ἀλλῆς κατὰ τὴν καὶ πάντων τοῦ οὐρανοῦ καὶ πάσης ζωῆς, καὶ τοῦ τοῦ πνεύματος οὐρανοῦ, μέτρον τῶν πάντων, ὡς πᾶσι τὴν οὐσίαν, καὶ τὸ τέλος ἐκτελειῶντα, καὶ ὡς πάντα περιέχοντα καὶ ὀρίζοντα ταῖς ἀφασταῖς αὐτοῦ, καὶ πάντα ὑπερπελάγηταις πρῶτος ὑπερχαίς, ὁ δαίμωνιος οὐρανός, κ. τ. λ.

measure,

measure, and so in all things. Thus, too, in qualities, there is a certain definite quality, and in quantities a certain indivisible quantum: for, with respect to measure, one kind is according to form, but another according to sense; so that there is not any essence which is essentially one. And this rationally: for *the one* signifies that it is the measure of a certain multitude; and number, that it is multitude measured, and a multitude of measures. Hence, it may be reasonably inferred that *the one* is not number: for neither is a measure measures, but a principle, and the measure, and *the one*. But it is requisite that a measure should always subsist the same in all things; as, for instance, if a horse is the measure in horses, and if a man in men. But if man, horse, god, and animal are measures, perhaps the number of them will be animals; but if man, white, and walking, there will by no means be a number of these, because all of them subsist in one and the same according to number. At the same time, however, there will be a number of their genera, or of something else which has a similar appellation. But those who make the unequal * as one certain thing, but the indefinite duad from the great and the

* *The one* and *the equal*, which are assumed in the more paternal principle, neither subsist as relatives, nor as accidents, but are superessential natures, the causes of union and equality to all things, and imparting by their illuminations permanency, stability, unchangeableness and purity to all things; in the same manner as the unequal itself, (which Aristotle sometimes divides into the great and the small, sometimes into the much and the few, and sometimes into the exceeding and excess), when it is considered as subsisting in the first duad, symbolically exhibits that cause which is the source of increase to wholes, and which is not only better than accidents, but than the essences which are generated from it.

But neither must we distribute a second or multifarious place in principles, or ascribe accident to divine ideas: for, according to the doctrine of the Pythagoreans, nothing is accidental to divine ideas: but there equality itself and science itself subsist. Sameness, therefore, similitude, and difference are essences, subsist from themselves, and do not depend on others for their subsistence. This Plato asserts in many places, but particularly in the *Phædrus*, when he says, speaking of the soul in a state of supreme felicity, "That it beholds *justice itself, temperance itself, and science itself*; not that with which generation is present, nor which is different from subsisting in that which is different, such as are the things which we now denominate beings, but that which is science from its residing in true being."

Hence it is usual with Plato to characterise idea by the epithets *auto naut auto*, *itself by itself*; by the former of these signifying its simplicity, and by the latter its immaculate purity. If cause, therefore, subsists among ideas, but that which is caused here, it does not subsist there accidentally, but essentially; and the same thing, in short, must be said respecting all habits. Hence some things there are superessential, but others essential; and accident subsists about the soul in generation (i.e. the sublunary region), and generation itself. And thus much in reply

the small, speak very far from the truth of things apparent and possible; for these are rather passions and accidents, than things subject to numbers and magnitudes. For the much and the few, the odd and the even, are the passions of number; and the great and the small, the smooth and the rough, the straight and the curved, are the passions of magnitude.

Further still: in addition to this error, it is also necessary that the great and the small, and things of this kind should be relatives. But of all the categories, relation is in the least degree a certain nature or essence, is posterior both to quality and quantity, and, as we have said, is a certain passion of quantity, but is not matter, or any thing else; and, in short, is something common both to the parts and species of quantity. For there is nothing, either great or small, or much or few, or, in short, which subsists as a relative, which is not much or few, great or small, or a relative, at the same time that it is something else. But that relation is in the smallest degree a certain essence, and being is apparent from hence, that of it alone there is neither generation, nor corruption, nor motion, as with respect to quantity there is increase and diminution, with respect to quality alteration, with respect to place local motion, and with respect to essence, simply generation and corruption; but this is not the case with respect to relation: for, without being moved, at one time it will be greater, and at another time lesser or equal, the other being moved according to quantity. It is also necessary that the matter of every thing should be such as the thing itself is in capacity; so that this will also be the case with the matter of essence: but relation neither in capacity nor in energy is essence. It is absurd, therefore, or rather impossible, to make non-essence to be the element of, and prior to, essence: for all the categories are posterior. Again: elements are not predicated of those things of which they are the elements: but the much and the few are predicated both separately and together of number, and the long and the short of a line, and a superficies is both broad and narrow. But if there be a certain multitude to which the few always belongs, it will be, for instance, the duad; (for, if this be much, *the one* will be few,) and if it be much simply, it will be much after the manner of the decad; and if this be not the case, it will be more than ten thousand. How, therefore, will number consist from the few and the

to the whole reasoning of Aristotle; but to say that *the few itself* is the cause of the duad which is there, or *the much* of the decad, does not by any means subvert any part of the doctrine of the Pythagoreans.

much?

much? For, either it is necessary that both should be predicated, or neither; but now one of these alone is predicated.

CHAP. II.

BUT it is requisite simply to consider whether it is possible for things eternal* to be composed from the elements: for they will have matter, since every thing consisting from elements is a composite. If, therefore, it is necessary that a thing should be generated from that from which it consists (both if it always is, and if it is generated), but every thing is generated from that which is in capacity the thing generated (for it could not have been generated from the impossible, and it was not before it was generated), but that which is possible may energise, and may not energise; if this be the case, number also, although it most eminently always is, or any thing else which possesses matter, may happen not to be, just as that which possesses the space of one day, and that which has any number of years whatever. But if this be the case, it will be true also of time, when it is so extended as to be without bound. There will not, therefore, be things eternal, since that is not eternal which it is possible may not be, as we have elsewhere shown†. But if that which is now said is universally true, that no one essence is eternal, unless it be in energy, and elements are the matter of essence, there will not be elements of any eternal essence, from which being inherent such essence is composed. But there are some‡ who make the indefinite duad together with

* The most ancient and the best of the philosophers, says Syrianus, assert that divine ideas and forms do not subsist from material elements, or altogether from elements which are so called, from being assumed in the constitution of something else. For that which consists from material elements may be generated and corrupted; but that which consists from immaterial elements, though it may be without generation, is nevertheless a composite. It is, however, necessary that divine forms should be simple and without generation, and that they should neither be arranged as soul, nor, for a much stronger reason, have a composite essence like the sensible universe. In short, it should ever be remembered, as Syrianus well observes, that *the antients called the generative causes of all things elements.*

† Viz. In the books De Caelo.

‡ The antients, says Syrianus, not fearing the admirable reasonings of logicians, nor rejecting this kind of equal, were willing to call the cause of multitude the duad; but because they were also willing to show its alliance with the more excellent principle, as they thought proper to call that *the equal*, they denominated this *the unequal*. But denominating that the monad, they called this the duad, for reasons which we have repeatedly mentioned.

the

the one, the element, but are very properly unwilling to admit the unequal, on account of the impossibilities which take place; from whom, such of the difficulties only are taken away, as must necessarily happen to those who make the unequal and relation to be the elements of things. But such difficulties as take place separate from this opinion, must also necessarily happen to these, whether they produce from them ideal or mathematical number. There are, therefore, many sources of error with respect to these causes; but the opinion of the ancients is especially the occasion of doubt: for it appeared to them that all things would be one, viz. being itself, unless some one solves the doubt, and at the same time proceeds conformably to the reasoning of Parmenides: for this cannot by any means be non-being; but it is necessary to show that non-being is. For thus, from being and something else, things will subsist, if they are many; though, indeed, this will be true in the first place, if being is manifold*: for *this* signifies that a thing is essence, *that* its possession of quality, *this* again that it is endued with quantity, and so of the other categories. What kind of one, therefore, will all things be, if non-being is not? Whether will they be essences, or passions; and in a similar manner other things? Or will they be all things? And the one will be this thing, and such-like, and so much, and such other particulars as signify one certain thing. But it is absurd, or rather impossible, that one certain nature should be a generated cause, and that of this being, and of the same being, something should be

* Without difference there will neither be ten genera of being, nor two, nor any thing else except one thing in number. But since there is difference there is also non-being: for each of the ten genera of being, if it is different from the rest, is more non-being than being, even though you should speak of substance itself. For, since it is substance, it is neither quantity, nor quality, nor action, nor passion. By composition, therefore, we shall perceive the force of the dogma: if there are many beings there is difference; if there is difference there is non-being; if there are many beings there is non-being. There is no other way, therefore, of understanding the Parmenidean reasoning, nor can the subsistence of multitude be admitted on any other hypothesis than that of introducing at the same time non-being. Nor on this account does Plato oppose Parmenides in that which is most true; but the assertions of both are indeed true, though that of Plato is more apparent. For Parmenides, alone discoursing about that which is intelligible, and considering its union, and the identity and Empedoclean friendship which predominates in its splendid essence, proclaimed being to be one; but Plato, knowing that a sensible nature also in a certain respect had a being, knew also that it is different from true being, and on this account ought rather to be called non-being than being. But that which is intelligible is not less multitude than one, and introduces to beings the nature of difference. In conformity, therefore, to this doctrine, Plato demonstrates non-being to be essential; as is proved in the Sophists by many arguments highly worthy of belief.

this

this particular thing, something else should be endued with quality, this belong to quantity, and that to situation. In the next place *, from what kind of non-being and being do beings subsist? For non-entity is manifold, since this is also true of being. And, indeed, *non-man* signifies that which is not this particular thing; but *not straight* signifies that which does not possess this particular quality; and *not three cubits*, that which does not possess this particular quantity. From what kind, therefore, of being and non-being, does the multitude of beings subsist? This opinion †, therefore, wishes to assert that which is false, and to call this nature non-being, from which, and being, the multitude of beings subsists. Hence, it is also asserted that something false ought to be supposed, in the same manner as geometers admit as an

* By no means as from form and privation; for privation is of no advantage to beings; but because, as there are five genera of beings according to the Pythagoreans and Plato, one of them is difference. But the business of this genus is to make every thing that which other things are not; and from the non-being which subsists according to difference, and from essence, beings are many: for essence communicates being to all things, since it is not, as it has appeared to some to be, the subject of things, but is the principle and fountain of being, which it imparts to all things without any diminution of itself. But difference disjoins and multiplies beings, not locally, but essentially, and causes other things not to be the same with others, and particulars to preserve the purity of their peculiarity, and an unmingled and immaculate subsistence. But if, speaking of beings in the usual way, we denominate them sensibles, and inquire from what being and from what non-being these derive their subsistence, again these divine men will speak of other genera of being, and will assign as the causes of these essence and difference: for their energy and prolific power are extended to all things which are in any respect beings. But as the lowest beings are subservient to many causes, and employ a more various composition, they derive being from form, but non-being from matter.

† As the Pythagoreans and Plato, says Syrianus, asserted that the non-being which is from difference subsists in intelligibles, sensibles, and that which is material, and as they called matter not only non-being, but that which is false, because it seems to be all things, but is fallacious, and neither is, nor is becoming to be any thing belonging to beings; the admirable Aristotle, in the first place interrogating them from what being and from what non-being they produce the multitude of essences, supposes them to speak of that non-being which subsists according to matter. In the next place assuming from them that they called matter false, which they subjected to forms, he says that they produce beings from the false, syllogizing after the following manner: Beings are from non-being: the false is non-being: beings, therefore, are from the false. Here it is evident that he alone considers non-being according to its lowest subsistence, but neglects to consider the whole extent of non-being according to those divine men, which diffuses itself as far as to an incorporeal essence, and omits to mention how the false was predicated by them of matter. For they did not call matter false in the same way as we are accustomed to call a discourse false, or an opinion false, which does not accord with things themselves; but it was thus denominated by them through the above-mentioned cause.

hypothesis,

hypothesis, that a thing is pedal which is not pedal. It is not, however, impossible, that this should be the case: for neither do geometricians suppose any thing false (since that is not the proposition in the demonstrative syllogism), nor are things generated or corrupted from that which is after this manner non-being. But since non-being, according to cases (*πτωσις*), is equally predicated with the categories, and, besides this, that is called non-being which subsists as the false, and also that which subsists according to capacity, from this generation takes place from that which is not man, but man is produced from man in capacity; and a thing white, from that which is not white in energy, but in capacity. The like consequences ensue whether one thing is generated or many. But the inquiry seems to be, how being, which is predicated according to essences, is many: for numbers, and lengths, and bodies, are things which are generated. But it is absurd to inquire how being, which is some particular thing, is many, and not also to inquire how it possesses quality or quantity. For neither is the indefinite duad* the cause, nor yet the great and the small, that two things are white, or that there are many colours, or tastes, or figures: for these will be numbers and monads. Indeed, if they had attended to these things †, they would

* The duad is indeed every where the cause of multitude so far as it produces things from *the one*, with their proper differences. But so far as it is a principle, there is also in the several orders of beings a proper monad; and a duad connate to this is found, and which generates a number accommodated to itself. But if those divine men said more respecting essences than accidents, and of intelligibles than sensibles, it is by no means wonderful: for almost the whole of their attention appears to have been directed to that which is *in its own nature* manifest and known, which has a perpetual sameness of subsistence and an intelligible essence; but they rarely declined to the shadows and ultimate boundaries of being.

† They considered accidents, indeed, (says Syrianus) and saw that the same principles had an analogous subsistence in these; and that they had their proper monad and duad; the former being the cause of identity to them, and the latter of difference and multitude. Nor was it through departing from (*κατα παρασάριν*) the true cause, nor from any other degeneration that they associated the biformed cause with *the one*. But the principle adduced by Aristotle, and which is predicated by negation, is material: for non-man is the matter of man. Those divine men, however, (Syrianus adds) knew that this principle is necessary in the last of things; but they did not call it a cause, but a concause: and in natural reasons, or productive seminal principles, they placed effective causes. There is, therefore, in nature one productive principle generative of all colours, and another which is indeed primarily perfected from this, but which produces together with it the multitude and diversity of colours: and these are the monad and duad of colours. In other accidents also, which are perfected through natural reasons, there will be found a monad and duad analogous to these.

have

have perceived the cause also in them. For the same thing, and the analogous, is the cause: for the deviation itself is the cause, and also the opposition of that which they investigated to being and *the one*, which induced them to suppose that which has a relative subsistence, and the unequal, because there is neither a contrary to, nor a negation of, these, but one nature of things, as, for instance, this particular thing, and that quality.

This also ought to have been investigated, how relatives* are many, and not one. But now it is inquired, how there are many monads besides the first one: but they do not also inquire how there are many unequals besides the unequal, although they employ and speak of the great and the small, the much and the few, from which numbers consist; the long and the short, from which length is composed; the broad and the narrow, which constitute superficies; and the deep and the low, from which bulks consist; and so of any other species of relatives which they may introduce. What then is the cause to these of their being many? It is necessary, therefore, as we have said, to suppose in each of these being in capacity†. And this also is evinced by him who makes these assertions, viz. that this particular thing is being in capacity, and essence, but that of itself it is non-being, because it is relative. Just as if he should speak of something of such a nature, that it is neither *the one* nor

* Those things, says Syrianus, which we call relatives, are one nature of beings, from which all the order, sympathy, harmony, and symphony in the world proceed; nevertheless the Pythagoreans did not neglect to consider the principles of this nature, but they assigned the causes of its single form and the multitude which it contains. But Aristotle speaks as if it appeared wonderful to him, that since they employed many unequals, as many monads, they did not say whence many unequals subsist. Why, however, besides ideas, and the principles of ideas, should any other causes of the multitude of unequals be desired? For, as similitude itself and dissimilitude itself are the causes of the multitude of similars and dissimilars, so equality itself and inequality itself are the causes of the multitude of equals and unequals. And of these things, indeed, Plato speaks in the *Phædo*, and more largely in the *Parmenides*. But if we ascend to the principles of ideas, we shall find still prior causes, the monad itself and the duad itself; the former of which vindicates to itself identity, equality, and similitude; but the latter difference, inequality and dissimilitude.

† The great and the small, the unequal, and the indefinite duad, says Syrianus, were not considered by the Pythagoreans as relatives. But if any where they call matter, as bearing resemblance of the indefinite duad, the great and the small, or the unequal, they exhibit by this the division, irregularity, and degradation of forms, when they proceed into the dark recesses of matter. For not only the one is distant from the other, but, what is truly wonderful, form becomes separated and distant from itself, when in its progression it approximates to matter.

being in capacity, nor yet a negation of *the one* or being, but one certain thing, which is something belonging to beings. But much more will this be the case (as we have said) if he inquires after what manner beings are many*, not by inquiring how things in the same predicament are many essences, or many things endued with quality, but how they are many beings: for some things are essences, others are passions, and others are relatives. In the other categories, therefore, the subsistence of the many is the subject of another consideration. For, because they are not separable, the subject becomes, and is many; and those things also endued with qualities and quantity are many. But though it is necessary that there should be a certain matter to every genus, yet it is impossible that it should be separate from essences. In things, however, which subsist as particulars, there is some reason in the inquiry, how this particular thing is many, if it is not something particular, and this very particular thing, and a certain nature. But this doubt rather originates from thence, how there are many essences in energy, and not one. However, if this particular thing is not the same with that

* The Pythagoreans, says Syrianus, did not neglect to assert something of sensibles, as having the most abject subsistence in the last of things; but as their attention was principally directed to first beings and intelligibles, which led them more frequently to consider the principles of those essences, they gave occasion to such as are busily employed about sensibles to assert, that they also contemplated sensibles analogously in objects of sense. It must also be observed, that it is by no means arduous to show how sensibles are many: for these are separated by place, use a different subject, and so great is the difference which prevails in them, that some of them even oppose themselves; but how intelligibles are many, since they are neither separated by place, nor detained in a subject, and have no habitude or tendency to secondary natures, may be very properly inquired by him, whose intellect is not perfectly sluggish, and scarcely able to be awakened from the sleep of oblivion. However, Syrianus adds, these divine men, before they evinced that multitude subsists in intelligibles, necessarily investigated the cause of the multitude which is there, and found that among the genera of being it is *difference*, which subsists according to *non-being*; but that, in causes most eminently the first, it is the indefinite duad, which Pythagoras in the Sacred Discourse calls Chaos, and which he associates with intellect; for he assigns this appellation to the monad, which is the first of the two great principles after *the one*. Hence, with great propriety, they seriously applied themselves to this investigation, and assigned the cause of the multitude of true beings; nor did they make the other of the principles (the duad) to be a relative, nor did they entirely neglect the contemplation of sensibles, as is evident from what Ocellus has written On the Nature of the Universe, from which (says Syrianus) Aristotle's Treatise On Generation and Corruption appears to have been with very little alteration derived (*μονονουχι μεταβιβλησθαι*). This is also manifest from the greater part of the Book of Timæus the Locrian, through which the Peripatetic philosophy derives a great part of its theology.

which

which is a certain quantity, it is not said how and on what account beings are many *, but how and on what account quantities are many: for every number signifies a certain quantity; and the monad is nothing else than a measure, because it is according to quantity indivisible. If, therefore, a quantity is different from that which subsists as a definite particular, it is not said from what such definite particular originates, nor how the many subsists. But if it is the same, he who asserts this sustains many contradictions. It may also be suggested with respect to numbers, whence are we to obtain conviction of their subsistence? for the doctrine of ideas introduces a certain cause to things, since every number is an idea. But idea in some way or other is the cause of being to other things: for let this be supposed by them. With respect, however, to the man who is not of this opinion, because he sees the difficulties with which the doctrine of ideas is attended, so that on this account he does not make them to be numbers, but introduces mathematical number, whence is it proper to believe that there is number of this kind, and that it is in any respect useful to other things? For, neither does he say that it is the cause of any thing, who asserts its subsistence, but such a one affirms that it is a certain nature, which has an essential subsistence; nor does it appear that it is a cause. For, as we have already said, all arithmetical theorems are conversant with sensibles.

C H A P. III.

THOSE, therefore, who assert that there are ideas †, and that they are numbers, should endeavour to inform us how and why they subsist, since, according

* If the Pythagoreans, says Syrianus, considered quantity and substance as the same, they must have made accident to be the same with essence, and subject with that which subsists in subject; and, in short, they must have opposed the phenomena. We must say, therefore, to Aristotle, that they called all beings numbers. Hence, inquiring how multitude subsists in numbers, they made all intelligible and sensible natures the objects of their investigation, and asserted that the duad is every where the cause of multitude.

† Aristotle having related three opinions, viz. that which venerates ideal number, which he usually ascribes to his master Plato; that which makes bodies to be numbers, which he attributes to the Pythagoreans; and that which alone recognizes mathematical number, he reprobates the third opinion, as being less rational than the others. That he is not serious however, in what he says, is I think evident from the following considerations. In the first place, as we are in-

ing to the exposition of each, every idea is one certain thing different from the many. However, as these things are neither necessary nor possible, neither must it be said that mathematical number has a separate subsistence. But the Pythagoreans, in consequence of perceiving many passions of numbers subsisting in sensible bodies, made beings to be numbers, not however separate; but they considered beings as composed from numbers. But why? Because the passions of numbers subsist in harmony, in the heavens, and in many other things. But, to those who speak of mathematical number alone, nothing of this kind follows according to their hypotheses; but it was said by them, that of these there will not be sciences. We however say that there is, as we before asserted. And it is evident that mathematical natures have not a separate subsistence; for, if they had, the passions of them would not be inherent in bodies. The Pythagoreans*, therefore, so far as relates
to

formed by Syrianus, none of the Pythagoreans thought that there was no other number besides mathematical; but perhaps, says he, those who made use of mathematical names in speaking of divine numbers, occasioned some to entertain this erroneous conception. In the next place, do they not employ, says he, a sufficient argument to prove that mathematical has a subsistence separate from sensible number, when they say: If there is arithmetic, or the physical science, there is separate number; but that which precedes is true, therefore that which follows is also true. But in answer to what Aristotle now says, that the passions, i. e. participated properties of separate essences, do not shine forth in sensibles, we may reply, that he equivocally uses the words numbers and passions, and that most things of this kind subsist after one manner in numbers composed from monads, and have indeed in these an analogous subsistence, and after another manner, in the productions of nature.

* Aristotle for the purpose of concealment having adopted the hypothesis that the Pythagoreans did not admit of separate number, but composed the sensible world from numbers; but that others, because axioms and universal propositions are not true in any thing sensible, gave a separate subsistence to number and magnitudes, he now doubts, against the Pythagoreans, how from numbers void of gravity and magnitude sensible bodies can be composed: but against those who separate, how the properties of magnitudes and numbers can be inherent in sensibles unless they are inseparable from numbers themselves. In defence, therefore, of the Pythagoreans, we must say that they were well acquainted with other numbers, and did not only discourse concerning such as are sensible, but also concerning the intellectual order of numbers, together with the orders belonging to soul and nature. And not only this, but they likewise asserted that the sensible world subsists from immaterial and energetic reasons, and from more ancient causes. But those who do not admit that nature herself is full of productive powers, lest they should be obliged to double things themselves, these wonder how, from things void of gravity and magnitude, gravity and magnitude are composed. Though these are never composed from things of this kind which are void of gravity and magnitude, as from parts.

But

to a thing of this kind, are not to be reprehended: but so far as they make natural bodies from numbers, from things without gravity or levity, things heavy and light, they appear to speak of another heaven and other bodies, and not of sensibles. But those who make numbers to have a separate subsistence, because axioms are not in sensibles, and the assertions of mathematicians are true, these cause a perturbation in the soul, and apprehend that numbers are, and have a separate subsistence; and in a similar manner, mathematical magnitudes. It is evident, therefore, that the adverse argument asserts contraries, and that which was just now doubted is solved by those who speak in this manner, viz. why, since these things by no means subsist in sensibles, yet the passions of them are in sensibles? But there are some*, who, in consequence of the subsistence of boundaries and extremities, viz.

But magnitude is generated from essentially impartible elements: since form and matter are the elements of bodies; and still much more is it generated from those truer causes which are considered in demiurgic reasons and forms. Is it not therefore necessary, that all dimensions, and all moving masses, must from these receive their generation? For either bodies are unbegotten like incorporeal natures, or of things with interval things without interval are the causes, of partibles impartibles, and of sensibles and contraries, things insensible and void of contact: and we must assent to those who assert that things possessing magnitude are thus generated from impartibles.

But, in defence of those who give a separate subsistence to numbers, we must say, that it is by no means wonderful that numbers should be similar to their causes. Since, therefore, separate numbers possess a demiurgic power, which mathematical numbers also imitate, the sensible world likewise with great propriety contains images of those numbers by which it is adorned; so that all things are in all, but in an appropriate manner in each.

But in answer to the argument deduced from axioms and the sciences, we may say, that either these axioms are false, or they accord, and are conjoined with, things themselves. If, therefore, they are false, you take away all knowledge; for demonstrations are from these. But, taking away all knowledge, you cannot affirm any thing of any being. If, on the contrary, axioms are true, and are adapted to, and conjoined with, things, with what things are they conjoined? It cannot be primarily with sensibles; for these have an individual partial subsistence; and whatever of things common are conjoined with them are also detained by matter. It remains, therefore, that they must accord with intellectual natures as their equals, but with intelligible exemplars as images and figures.

* Aristotle says that some of these divine men assumed terms or boundaries as forms and essences; which doctrine he apparently opposes, because, says he, terms are not essences, and much less are they separate essences. In defence, however, of these men it may be said, that they did not make known terms to be separate essences, but those which subsist in the essential reasons of intellect, soul and nature; which both terminate in a more principal manner, and give limitation to generation itself. Of these, sensible terms exhibit, like impressions in wax, an ultimate resemblance, (*τελευταίαν ἀπεικασίαν ἀπὲρτυπωσάντων*).

from

from a point being the boundary of a line, a line of a superficies, and a superficies of a solid, are of opinion that such natures must necessarily exist. It is requisite therefore to consider, whether this opinion also is not very debile: for neither are extremities essences, but rather all these are boundaries: since both of walking, and universally of motion, there is a certain boundary. Is therefore this boundary some particular thing, and a certain essence? But to suppose this would be absurd. Admitting, however, that they were essences, all of them would be sensibles: for the assertion admits that they subsist in these. Why therefore will they be separate?

Further still*: some one who is not very easily persuaded, may inquire concerning every number, and mathematical natures, why such of these as are prior contribute nothing to those that are posterior: for, according to

* Aristotle doubts against those who alone admit and extol a mathematical essence, why, since numbers according to them are prior to magnitudes, soul, and bodies, things posterior are not always produced from such as are prior; but magnitudes are, and are generated without numbers; and likewise, though these should be taken away, there will nevertheless be soul and bodies. But against those who admit ideal number he doubts, whether magnitudes which are proximately produced from numbers, are also ideas themselves, or not. In defence, therefore, of the former of these we say, that they did not alone consider the mathematical essence, and that they asserted that things prior, by imparting an order to subjects themselves, always contribute to the subsistence of secondary natures. For it is requisite that the series of natural things should be continued, and that every thing adventitious should be excluded. But we have often said in the preceding notes, that these divine men had not a knowledge of the mathematical essence alone, although in delivering the doctrine respecting divine natures they employed mathematical names. This, indeed, the present doubt of Aristotle clearly evinces: for if he accuses them as not composing the soul from magnitudes and numbers, which have a subsistence prior to soul, he manifestly testifies, that they generate those numbers which are in intellect through divine numbers.

But in defence of the latter of these we may say, that the first magnitudes are ideas, viz. the circle itself, the pyramid itself, and the triangle itself; but that a reminiscence of them is produced in us, by the mathematical reasons. Not indeed that mathematical speculations are accommodated to these, since they are discursive and divisible, and conclude through hypotheses, but, as Plato says in his seventh Epistle, the circle itself is neither known by figure, nor name, nor definition, nor science, but is alone to be perceived such as it is in itself by intellectual intuition, projection, and adhesion. However, by the collision of scientific considerations, as from that of stones emitting fire, an intellectual light shines forth in the soul, in which, by its own splendour, it is nourished and preserved. "The mathematical method, therefore, says Syrianus, is a certain preparation, exercising the soul, as in images, to the self-vivise and intuitive perception of the paradigm: (i. e. of that divine intellect which is the paradigm of the mathematical science) (*μαθηματικὴ μέθοδος προπαρασκευάζει τὴν ἐσιν, ὥς ἐν εἰκασί τινι παραδείγματι τὴν ψυχὴν πρὸς αὐτοπτικὴν τοῦ παραδείγματος ἐπίβολον.*)

those

those who say that mathematical natures alone subsist, though number should not be, yet magnitudes would still have a subsistence; and though these were not, yet still soul would be and sensible bodies. But from the phenomena nature does not appear to be adventitious, like a bad tragedy. This, however, escapes the notice of those who introduce ideas: for they make magnitudes from matter and number; from the duad indeed lengths; but from the triad perhaps superficies; and from the tetrad solids, or from other numbers: for it is of no consequence. But whether will these be ideas, or what is the mode of their subsistence, and what do they contribute to beings? Nothing indeed, as neither do mathematical natures contribute any thing. But neither is there any theorem of these, unless some one is willing to move mathematical entities, and to make certain peculiar opinions. But it is not difficult for those who assume any kind of hypotheses to be prolix and speak incessantly. These therefore in this manner err, by connecting mathematical entities with ideas. But the first of these making two numbers, the one of forms, and the other mathematical, by no means say, nor are they indeed able to say, how and from what a mathematician will be formed; for they place him between the formal and the sensible: for, if from the great and the small, he will be the same with him who is one among the number of ideas; but if from another small and great, he will compose magnitudes. If, however, he speaks of any thing else, he speaks of many elements. And if the principle of each is a certain one, *the one* will be something common in these. But then it must be investigated how these many are one; and at the same time, according to him who makes this assertion, it is impossible for number to be generated, otherwise than from *the one* and the indefinite duad. All these consequences, therefore, are irrational, and both oppose themselves, and those who argue rationally. In these conclusions, too, there appears to be the long discourse of Simonides: for a long discourse is like that of slaves, where nothing sane is asserted. They appear also, with respect to these elements*, the great and the small, to exclaim as if they were dragged up with violence: for they cannot by any means generate number, without doubling that which proceeds from *the one*. But it is absurd †, or rather, it is.

* It has often been said by us, that the duad which the Pythagoreans called *the great* and *the small* is generative of all multitude.

† Where, says Syrianus, is the error of the Pythagoreans, if they do this for the sake of the doctrinal

is one of the things impossible, to introduce generation of these things which are eternal. With respect to the Pythagoreans*, therefore, there is no occasion to hesitate, whether they introduce, or do not introduce, generation: for they clearly assert that, *the one* being established, immediately that which is nearest to the infinite, whether from superficies, or from colour, or from feed, or from such things as they are dubious to assert, is drawn forth, and terminated by bound. But, since they show how the world was fabricated, and are willing to speak physically, it is just that they should investigate something concerning nature, but depart from the present method: for we investigate the principles in things immovable. So that it is requisite to consider the generation of numbers of this kind.

C H A P. IV.

THEY do not, therefore, speak of the generation of the odd † number, as if it were evident that generation is of the even number. But they first of all constitute the even ‡ number from unequals, i. e. the great and the small

doctrinal method? Aristotle, however, says this consistently with himself; as he does not openly admit an effective cause in things eternal. But, according to the Pythagoreans and Plato, all things derive their subsistence from principles.

* “The manner, says Syrianus, in which Aristotle proposes these reasons, will not be concealed from the more intelligent. But that we may pursue the meaning of the Pythagoreans from what he lays down, we must say that, according to them, that one thing which is composed from matter and form is a whole. But they assert that this is constituted in the following manner. That reason or productive principle which proceeds from nature, and which generates colour, figure, and dimension, generates, in the first place, body void of quality; (*αποιον σωμα*), for this is proximate to the infinite, (i. e. to matter); and afterwards that body which is composed from matter and form, when bound and physical-reason have perfectly occupied this body without quality, as their subject.” But what these divine men have said respecting separate numbers, we have before related.

† “The Pythagoreans, says Syrianus, ascribing the odd among numbers to ideas, very properly say that it is unbegotten; but assuming the even as analogous to material natures, they call it generable, and associate it with the duad: for we have often observed that they generate co-ordinate even and odd numbers from the same principles, though they assert that the odd are similar to the monad, and the even to the duad.”

‡ Here, also, Syrianus informs us, “that the Pythagoreans asserted that the even number possessed through matter, as proceeding from the duad, the great and the small; but that through

small equalized. It is therefore requisite that inequality should subsist prior to the equalization of these. But, if they were always equalized, they would not have been prior to this unequal: for there is not any thing prior to the even. So that it is evident that they do not make the generation of numbers for the sake of contemplating. But the manner in which elements and principles are related to the good and the beautiful is dubious, and, to him who doubts properly, is a subject of reprehension. The doubt is this, whether some one of them is such as we wish to call the good itself, and the most excellent, or whether this is not the case, but they are of posterior generation. Indeed, by some of the present theologists this appears to be acknowledged, who say, that from the progression of the nature of things the good and the beautiful become apparent. But they do this to avoid the real difficulty which happens to those who assert (as is the case with some) that *the one* is the principle of things. The difficulty, however, arises, not from their attributing to the principle good as a thing present with it, but from their considering *the one* as a principle, and that it is a principle as an element*, and that number is from *the one*.

Thus, too, in a similar manner ancient poets † assert, that Jupiter reigned
and

through form, it is tempered with equality. These things, however, have no temporal origin, but are eternal. But if they assert that things without order are prior to such as are orderly disposed, this is the common method of all the Pythagoreans, which they adopted for the sake of the doctrinal method (*διδασκαλίας ενκα*). Aristotle also says, that matter is prior to, and is the principle of, body, though it is perpetually adorned."

* *The one* concurs with *the good*, and is not to be called a principle in the same manner as an element, from which when inherent number consists: for *the one*, according to Plato, is the same with *the good*, and transcends all essence, intellect, and life.

† Aristotle, from not enduring that causes should be called by the same names as their effects, relates, as it appears to me, the opinions of ancient theologists in a superficial manner. "For, says Syrianus, they assert that Night and Heaven reigned, and, prior to these, the mighty father of Night and Heaven, who distributed the world to gods and mortals, and who first possessed royal authority, the illustrious Ericapæus.

τοιον ελων διενειμα θεοις, θνητοισι δε κοσμον
ου πρωτος βασιλευε περιελωτος ηρικεπαιος.

Night succeeded Ericapæus, in the hands of whom she has a sceptre.

σκεπτρον εχουσ' εν χειρσιν ηρικεπαιου

To Night, Heaven succeeded, who first reigned over the gods after mother Night.

ος πρωτος βασιλευε θεων μετα μητερα νυκτα.

and governed, and not those first principles such as Night and Heaven, or Chaos, or even Ocean. But it happens indeed to these, to assert things of this kind, in consequence of changing the rulers of the world; since those among these, who were of a mixed class, and who did not speak of these things fabulously, such as Pherecydes, and certain others, establish the first generating principle, as the best* of things. This is also the case with the Magi, and among the wise of latter times, with Empedocles and Anaxagoras; the former making friendship to be the element, and the latter, intellect to be the principle, of things. But of those who assert that there are immoveable essences, some say that *the one* † is *the good itself*; but nevertheless they are of opinion that the essence of *the good* is especially *the one*. In which way, therefore, is it proper to solve this doubt? But it is wonderful, if to that which is first, perpetual, and most sufficient ‡ to itself, sufficiency and the preservation

Chaos transcends the habitude of sovereign dominion: and, with respect to Jupiter, the Oracles given to him by Night, manifestly call him not the first, but the fifth immortal king of the gods.

ἀθανάτων βασιλῆα δὲ πρῶτον γενέσθαι.

According to these theologists, therefore, that principle which is most eminently the first, is *the one*, or *the good*, after which, according to Pythagoras, are those two principles Æther and Chaos, which are superior to the possession of sovereign dominion. In the next place succeed the first and occult genera of the gods, in which first shines forth the father and king of all wholes, and whom, on this account, they call Phanes. Neither, therefore, do the best of the philosophers depart from the gods; nor do theologists, assert, that things of a posterior nature are more powerful and excellent than such as have a more principal subsistence, but there is one truth among them all."

* "Aristotle, says Syrianus, rightly admits the ancient theologists asserting that the first cause is the best of all things. They do not, however, make mutations of kingdoms, though in their fabulous fictions they introduce things of this kind. But, more ancient causes always abiding in their proper mode of subsistence, they say that such as are of a second rank after this manner subsist."

† Again Syrianus informs us, "that not only, according to Plato, *the one* and *the good* are superessential; but also according to Crocinus the Pythagorean, and almost all who came from the schools of the Pythagoreans. Nevertheless, *the one* was considered by them to be the essence of the first principle, which they called *the good*, as being the cause of unity and goodness to all things."

‡ Perfect sufficiency is inherent in *the good* on account of the simplicity of his subsistence; since this is with him the same thing as to be *the good itself*: for he is not good and something else, but this very thing, and this alone, *the good itself*. So that he is *the one*, because his nature is not composed from *the good* and something else: for, if this were the case, we should be in want of another principle, in which good would not be mingled with any other nature, but
would

preservation of itself should not be good to it the first of all things. Indeed, it is incorruptible and sufficient to itself for no other reason than because it has an excellent condition of subsistence. So that to say that the principle of things is of this kind, may rationally be supposed to be true. That this, however, should be *the one*, or, if not this, the element of numbers, is impossible: for many difficulties attend this hypothesis, which some in order to avoid, acknowledge that *the one* is the first principle and element of things, but that this one is not the principle of mathematical number: for, if this were the case, all the monads would become a certain good, and there would be a great abundance* of things good.

Further still: if forms are numbers, all forms will be a certain good. Let, however, any one suppose ideas† to be of whatever nature he pleases: for, if they

would be perfectly pure. But Aristotle adduces a difficulty respecting *the one*, because he understands it in his usual way, rather than theologically. If, however, some supposing *the one* to be the principle of mathematical numbers, take away from it afterwards *the good*, such do not speak concerning the principle of all things, but concerning the cause of monadic numbers. And it is evident indeed, that even this cause is the good of those things which are generated from it; yet it is not simply *the good* itself. That which he says is indeed certain, that all monads are a certain good; but then these are not material monads, but those which are considered in the forms of numbers. Thus the pentad may be said to be the good of the number five, viz. of the number five considered as consisting from five monads which correspond to matter, and the pentad which corresponds to form; and, in the same manner, the decad is the good of the number ten. Yet they are not that which is simply good, in the same manner as the unities (*unities*) proceeding from that principle which is most eminently the first: for these are not only gods, but are likewise, according to Plato and the Pythagoreans, certain connectives, *συνόχαι*, of gods. Nor is there any absurdity in admitting that there is an affluence of good in divine natures: for that which is divine is void of envy, and is incomprehensible by human reasoning. Ideas also and numbers possess the form of good, as being most eminently the progeny of the first cause.

* For *απορία* read *εὐπορία*.

† In answer to what is here doubted by Aristotle, it may be said, that if there are ideas of the virtues, it does not follow that such ideas will not be essences: for the image is not altogether such as is the exemplar in things of this kind; but impartibles are the causes of partibles, intellectual natures of such as are not intellectual, and immortal of such as are mortal. In like manner, essences are the causes, not of any kind of qualities, but of those which are perfective of essences. There are therefore ideas of all universal essences, and of whatever contributes to the perfection of these; but it does not necessarily follow from this, that every thing in the sublunary region should be beautiful and good: for that which receives the illuminations of supernal natures does not always retain symmetry and order; but is hurried away to the

they are of things good alone, ideas will not be essences. But if of essences also, all animals and plants are good, and the participants of these. These absurdities, therefore, attend this hypothesis, and the contrary element, whether it be multitude, or the unequal, and the great and the small, will be evil itself. Hence, a certain person avoids connecting *the good* with *the one*, because, on this hypothesis, since generation is from contraries, the nature of multitude must be necessarily* evil. But others assert, that the unequal† is the nature of evil. It so happens, therefore, that all beings participate of evil‡, except *the one* which is *the one* itself, and that numbers participate it more purely than magnitudes. It also follows that evil is the place of good, and that it participates and aspires after that which is corruptive of itself: for one contrary is corruptive of another. But if, as we have said, matter is every thing in capacity, as, for instance, fire in capacity of fire in energy, evil will be the good itself in capacity. All these things therefore happen §, in

contraries of these, through the imbecility of its nature. In the next place it may be asked, why, if *the one* is good, must the other principle the duad be evil? For, in the first place, the Pythagoreans and Plato called that *one the good*, which is abstracted from all composition or co-ordination with another, and transcends the two principles posterior to *the one*. But even if they had said that the more divine of the two principles, which they call the monad, is *the good*, it would not follow that according to them the duad (though it should have some other opposition to the monad) is evil. For divine natures are not generated, and do not proceed from an opposition of this kind, but from the most excellent principle, and which possesses the most pure and immaculate good. The impossibilities, therefore, which Aristotle collects in what follows, as consequent to the hypothesis, do not in any respect accord with the real meaning of those divine men: for, according to them, evil is entirely excluded from principles, as Plato manifestly asserts in the Theætetus.

* For *εναρτίον* or read *αὐαγνατόν* or.

† They assumed, says Syrianus, that *unequal* which is the cause of beings, and which is more antient than *difference itself*, among the genera of being. They likewise not only denominated it most excellent, but asserted that it is especially generative of the most excellent natures. But if in the last of things, and in material natures, there is any thing unequal, which is reprobated by these divine men, this no further pertains to the cause generative of multitude, except that this also in a certain respect is derived from thence.

‡ It must not be thought that Aristotle here says any thing in reality against the Pythagoreans: for they by no means placed evil among principles.

§ This absurdity follows, says Aristotle, because they make every principle an element. But what are the absurdities which he considers as consequent to this? That all things are good, if *the good* is a principle as an element; that evil is a principle, because they consider contraries as principles; that *the one* itself is a principle, for it will no longer be good if it is

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in consequence of making every principle an element,—contraries principles,—*the one* the principle of things,—and numbers the first essences, having a separate subsistence, and existing as forms.

CHAP. V.

IF, therefore, not to rank the good among principles, and to rank it among them in the manner we have mentioned, is impossible, it is evident that neither principles nor the first essences are rightly assigned. Nor yet does he conceive rightly, who assimilates the principles of the universe to the principle of animals and plants; because things more perfect always proceed from such as are indefinite: on which account also, in first essences, they say, it so happens that neither is any particular being *the one* itself. But, in sensible things also, the principles from which sensibles originate are perfect. For man generates man, and seed is not the first thing. It is also absurd to make place * together with mathematical solids: for the place of particulars

is

the one; and lastly, that numbers will participate of unmingled evil, because they say that first essences are numbers. Four absurdities, therefore, follow the four hypotheses: for all things will be good and evil; besides *the one itself* there will also be an evil principle; the principle of things will not be *the good*; and numbers will participate of unmingled evil.

We must say therefore with Syrianus, that the Pythagoreans did not make element a principle to all things, in the sense in which it is adopted by Aristotle; nor did they make these contraries to be principles, so that the one is *the good*, and the other *evil*; nor did they understand *the one*, as Aristotle now understands it; nor does it follow that, because there are separate numbers, they participate of pure and unmingled evil. Since, according to them, unmingled evil is not only expelled from an intelligible essence, but also from the whole of the ethereal region. Hence, it solely wanders about a mortal nature, and is associated with partial good. Principles therefore are rightly delivered by the Pythagoreans; and it is better to call *the good*, *the one*, than to call it *intellect*: for he who calls it *the one*, preserves *unmingled* good, and *good alone*; since good is not willing to be associated with any thing else. But he who calls it *intellect*, does not make it to be good alone; since intellect possesses multitude, though this multitude is profoundly united.

* Alexander Aphrodisiensis, according to Syrianus, says that this is advanced by Aristotle against Plato. If, therefore, says he, Alexander rightly conjectures the meaning of Aristotle, we shall not assert any thing inconsiderate respecting the divine Plato, in saying that he made our imagination the place for mathematical bodies, in the same manner as matter is the place of material forms. There is however this difference, that matter, receiving material form from nature, neither knows that which it receives, nor is able to detain it. But our imagination, receiving mathematical body from a superior soul, both contemplates and preserves it,

is peculiar to them, on which account they are locally separable. But mathematical solids are not situated in a certain place. And to say indeed that they are situated somewhere, and at the same time not to say what place * is, is absurd. But it is requisite that those who assert that beings are composed from elements †, and that numbers are the first of beings, should, by dividing one thing from another, inform us after what manner number subsists from

to the utmost of its ability. Hence, there is one place of natural bodies, another of material forms, another of mathematical bodies, and another of immaterial reasons. Nor is there any thing of innovation in these assertions. For Aristotle himself, in his books *De Anima*, calls the intellectual soul the place of forms; and those who read the *Timæus* with attention will discover that Plato there speaks concerning the place of natural bodies.

* Instead of *τι δὲ ἐστὶν ὁ τόπος, μὴ αὐτόθεν*, read *τι δὲ ἐστὶν ὁ τόπος, μὴ εἴτεν αὐτόθεν*.

† There is not the same reasoning respecting the subsistence of mathematical and that of ideal numbers; for, though we do not attribute to the former natural quantity, yet at least we ascribe to them mathematical matter as their subject. But ideal numbers are perfectly impartible, intellectual, energetic, and demiurgic, and have their subsistence in simple and immaterial forms and principles. This being the case, it is requisite clearly to distinguish respecting what numbers Aristotle makes these interrogations. Nevertheless, because he seems rather to interrogate concerning ideal numbers (for the first of beings were called by the Pythagoreans, not mathematical, but ideal numbers), we must again say, that neither composition, nor subject, nor privations, nor element receiving corruptions, nor any thing else of this kind, is assumed in constituting divine numbers. For all these subsist about a material nature, and a nature which is differently affected at different times. But all divine natures, since principles always remain the same, proceed with self prolific energy, through the affluence of the prolific power of primary causes; and through their own self-splendid and self-prolific property, they subsist always in the same things, and after the same manner, being firmly established far remote from generation and corruption, composition and division, and all mutation. They likewise preside over the whole of nature, and over the mundane soul by which nature is governed, exciting them to continual energies about generation, lest its fluctuating empire should fail, or the irregularity about matter should be victorious. But all things are adorned by the natural and demiurgic powers of ideas and numbers. Those mundane wholes, therefore, which detain and renovate things naturally flowing, mortal and corruptible, cannot be corrupted by the very natures which they preserve.

With respect likewise to what is now said of Empedocles, it must be observed, that, as the accusation is not rightly made, it is not reasonable to suppose that Aristotle is serious in making it. For *strife*, says Syrianus, is not corruptive, according to Empedocles, since it fabricates the universe; nor is the sphere which he introduces ever according to him dissolved, unless some one, by dwelling on the words which antecede the whole of his theology, should become deprived of his true meaning. But *strife*, according to this philosopher, is generative of multitude and difference; and *friendship* of sameness and union. Hence in *intelligibles*, which he denominates a sphere, *friendship* has dominion, but in *sensibles* *strife*: for in each of these there is unity and multitude; but in friendship unity predominates, and in strife multitude.

principles

principles, and whether this is accomplished by mingling. But neither is every thing mingled which is generated.

Does number then subsist from composition, as a syllable? But, in this case, it is necessary there should be position; and he who employs his intellect on this subject will understand separately *the one* and multitude. Number, therefore, will be the monad and multitude, or *the one* and the unequal. And since that which subsists from certain things, subsists indeed partly as from things which are inherent, and partly not, in which way will number subsist? For those things which subsist as from things inherent, are no other than those of which there is generation. Does it, therefore, subsist as from seed? But it is impossible for any thing to depart from that which is indivisible. Shall we say, it is as from a contrary not abiding. But things which subsist in this manner, are also from something else which is of a permanent nature. Since, therefore, with respect to *the one*, this person considers it as contrary to multitude, but that as contrary to the unequal, employing *the one* as if it were the equal, number will subsist as from contraries. There is, therefore, something else from which, being permanent, the generation of the other is effected.

Further still: why are such other things as are from contraries, or to which there are contraries, corrupted, though they may consist from every thing, but this is not the case with number? For, respecting this nothing is said, though contrary, both when it is inherent and when it is not inherent, corrupts; as, for instance, strife that which is mixed. This, however, is not requisite; for the former is not contrary to the latter. But nothing is determined with respect to the manner in which numbers * are the causes of essences.

* Aristotle relates two opinions respecting the subsistence of essences from numbers, neither of which he admits according to their literal acceptance. For, neither (says he) are numbers the boundaries of essences, as points are of lines. For the Pythagorean Eurytus, entertaining this opinion, said that this particular number is the boundary of this plant, and again another number of this animal; just as of a triangle 6 is the boundary, of a square 9, and of a cube 8. Nor are numbers boundaries, as others assert them to be, because essences are generated by ratios, but ratios are certain symphonies, and symphonies are modulated and composite habits of numbers. For, from none of these hypotheses, says he, can it be shown how accidents are produced from numbers. In answer to this, says Syrianus, it must be said, that Eurytus and his followers, beholding the images of things themselves in numbers, rightly attributed certain numbers to certain things according to their peculiarity. But the second of these opinions omits to speak of natural numbers: for these are truly effective of symphony in a subject. For,
how

essences, and of being, whether as boundaries in the same manner as points of magnitudes, and, according to Eurytus, as number of a certain thing; as, for instance, this number of man, and that of horse. Just as those who refer numbers to figures, the triangle and the square, thus assimilating the forms of plants to calculations. Shall we say, this is because it is either ratio, or the symphony of numbers? and in a similar manner, with respect to man and every thing else. But with respect to passions, how are they numbers, such as the white, the sweet, and the hot? However, that numbers* are neither essences, nor the causes of form, is evident: for reason is essence; but number is matter, as, for instance, the number or essence of flesh or bone. Thus, too, three of fire, but two of earth; and always number, whatever it may be, is of certain things, and is either fiery, or terrene, or monadic. But essence consists in being *so much* with respect to *so much* according to mixture. But this is not number, but the ratio of the mixture of corporeal numbers, or of certain things. Number, therefore, is not a cause by making†: nor is number altogether, nor monadic number, either as matter‡, or as reason and the form of things. Neither is it as that for the sake of which a thing subsists.

how could the dominion of one form make a subject to be one, when the contraries which it contains do not accord, and are void of modulation? But what other in this case will numerate besides nature herself? For, as the musician harmonizes his lyre through mathematical numbers, so Nature, through her own natural numbers, orderly arranges and modulates her productions.

* Aristotle here assumes that every number is the number of certain things, and is indigent of a subject; and again, that reason is the cause of mixture, and not number. The Pythagoreans, however, says Syrianus, supposed immaterial numbers, and asserted that numbers are the causes of the natures in sensibles, which are adapted to their recipients, and of the mixture of every composite.

† Since there are four causes, Aristotle says, that number is no one of these. For it neither (says he) has an effective power like seed, nor is it as form in sensibles, nor as matter, nor as the final cause. This is true indeed of mathematical number, but not of that which is physical or divine. For all causes are numbers except matter: but this is not a cause, but is merely subservient to causes in the generation of things. We must say, therefore, that divine numbers are energetic, and that they communicate other numbers, viz. material forms to subjects, and that they energize for their own sake.

‡ For οὗτε ἢ ὕλη, read οὗτε ὡς ἢ ὕλη.

CHAP.

C H A P. VI.

BUT some one may doubt what the good is which results from numbers*, if mixture is either in rational or in the odd number: for now nothing more salubrious arises, from water and honey being thrice three times mingled: but it will be more beneficial if there be no proportion in the mixture; and it will be watery, or in number unmingled. Further still: the ratios of mixtures consist in the addition of numbers, and not in numbers themselves; as, for instance, the ratio between three and two is that of three to two, but is not thrice two: for it is requisite that there should be the same genus in multiplications; so that it is requisite that the series abg should be measured by a , and dex by d ; so that all things must be measured by the

* In answer to what is now urged by Aristotle, we may say with Syrianus, that the more useful is the more congruous mixture, and that when it is more consonant it is proportioned and commensurate: but this is acquired through natural arithmetic. Thus, too, says he, some one may reply to those who direct their attention to occasion in the several actions of life, who do not look to the whole of things, nor employ reasoning in conjunction with sense, and who order us to trust to opportunity alone,—that it is better to act with prudence than from occasion; that it is the first business of prudence to know by reasoning the opportunities accommodated to particular actions; and thus to consider other things which tend to the orderly acquisition of the end. In like manner, the Pythagoreans say that numbers of a slender subsistence and these mathematical are not received by nature, or chosen by prudent men, but that good accedes to particulars through the best numbers which are endued with proportion, and are not mathematical, but natural, and operative: for God and nature, according to them, produce all things through number. They add, that prudent men exhibit the beauty of fabricative numbers through mathematical numbers; since they cannot in any other way instruct those who do not follow the whole order of beings.

But Aristotle in what follows, obviously, and therefore we may conclude designedly, paralogises; for he assumes mathematical names in natural things. However, as we are informed by Syrianus, philosophers more antient than Aristotle denominated the progressions of the prolific powers of nature, multiplications, which progressions rule over their subject matter, and possess proportion and symphony.

In answer to what is said after all this, viz. That if all things communicate with number, and every number is in things, it is necessary that many things should use the same number, and that there should be many numbers of the same thing, we may reply as follows: Though all words and sentences are composed from the twenty-four letters as elements, and though all letters appear in sentences, it is neither necessary that different sentences should use the same letters, but that they should partly use the same and partly not; nor is it necessary that different letters should be in the same word, as, for instance, that all the letters of the word *Plato* should be in the word *Socrates*. In like manner, in natural reasons and numbers, all these are operative, and all natural things consist through them, yet different things are not immutably adorned with the same numbers.

same measure. There will be, therefore, of fire *begz*, and of water the number twice three. But if it is requisite that all things should participate of number, it is also necessary that many things which are the same should happen, and that there should be the same number to this thing and to another. Is, therefore, this the cause, and is a thing through this? Or is it immanifest, such as is a certain number of the revolutions of the sun*, and again of those of the moon; and of the life and age of every animal? What, therefore, hinders, but that some of these may be squares, others cubes, and equal to each other, and others again double? Nothing, indeed, hinders; but it is necessary that they should be intimately connected with these, if all things participate of number. It will also happen that things which differ from each other will fall under the same number; so that, if the same number happens to certain things, they will be the same with each other, having the same form of number; as, for instance, the sun and moon will have the same numerical form. But through what cause† have they the same form? There are, indeed, seven vowels, seven

* That there is a solar number, and also a lunar number, and a proper number of each of the bodies that revolve in the heavens, is, says Syrianus, manifest according to the adage, even to the blind. For the restitutions of the heavenly bodies to their pristine state (*ἀποκαταστάσις*) would not always be effected through the same things, and in the same manner, unless one and the same number had dominion in each. Yet all these contribute to the procession of the celestial spheres (*τὸ θεῖον γέννητον*), and are contained by their perfect number. But there is also a certain natural number belonging to every animal. For things of the same species would not be distinguished by organs after the same manner, nor would they arrive at puberty and old age about the same time, or generate, nor would the foetus be nourished or increase, according to regular periods, unless they were detained by the same measure of nature. Syrianus further observes that, according to the most excellent of the Pythagoreans, Plato himself, number is the cause of better and worse generations. Hence, says he, though we sometimes speak of the squares and cubes of natural numbers, we do not make them to be monadic, such as the number 9 and the number 27, but we signify through these names from similitude the progression of natural numbers into, and dominion about, generations. In like manner, though we call them equal or double, we exhibit the dominion and symphony of ideas in these numbers. Hence different things do not use the same number, so far as they are different, nor do the same things use a different number, so far as they are the same.

† As if he had said, But let us see by what arguments they prove that these are the causes of things. Celebrating, therefore, the heptad, they say that there are seven vowels through which speech receives its completion. The symphony called the diapason also consists of seven sounds; and still further, the Pleiades are seven in number, and animals shed their teeth in seven years; from all which he reprobates the conclusion, that through this number some things subsist.

seven chords or harmonies, seven Pleiades.: in seven years, too, some shed their teeth, and some do not; and those who led an army against Thebes were seven in number. Is it, therefore, because such a particular number is naturally adapted to the purpose, that either they were seven, or that the Pleiades consist of seven stars? Or are these, indeed, on account of the gates of Thebes, or through any other cause? But if we thus numerate and assign twelve stars to the Bear, others ascribe to it a greater number: for they say, that $\xi \psi \zeta$ are symphonies: and that, because those are three, these also are three. However, that there are ten thousand such-like things is not an object of concern to any one: for γ and ρ will be one sign; but if at one time

sist in this particular manner, and others not. Those also who led an army against Thebes were seven in number. Afterwards he demonstrates that none of these subsists through the number seven, but from another cause. And indeed, as Syrianus justly observes, it would be ridiculous to think that this number was the cause of the Grecian leaders, or of the Pleiades. For it must not be said that this constellation was thus constituted by the providence of its divine Artificer; but rather that the whole of it participates of abundant position. Hence, he adds, the fixed stars are differently arranged by the Egyptians, Chaldeans, and Grecians. Aristotle also very properly observes respecting the double consonants, that they are not three, because there are three symphonies. Nor, says Syrianus, can each of these consonants be reduced to the several symphonies, as, for instance, ξ to the diatessaron, or ξ to the diapente, or ψ to the diapasen; but rather, because there are three modes of pronunciation, one is accomplished through each. Syrianus adds, that this mode of distribution, as Theophrastus relates, was adopted by Archinus; but nevertheless that we must not reprobate physical assertions respecting numbers, because some more recent philosophers have adopted illegitimate modes of distribution.

Indeed, if any thing of this kind had been asserted, either by the divine Plato, or by any one of the illustrious Pythagoreans, Aristotle might be considered as now seriously opposing their doctrine. This, however, is far from being the case: for Syrianus informs us that Pythagoras, who was the first that asserted many things both venerable and divine concerning the heptad, adopted no distribution of this kind, but prudently evinced after what manner nature through seven years, or months, or days, perfects or transmutes many things of this kind. But others (says he), discoursing respecting the decad, unfolded its kingdom in the whole of the celestial regions, and its empire in the several productions of nature; and Pythagoras himself discourses both theologically and physically concerning all the numbers from one to ten, and this without employing any trifling and frigid distribution. Aristotle also himself, when he speaks seriously about things of this kind, admires the power of numbers, and adopts the theory of the Pythagoreans: for in the beginning of his treatise *De Cælo*, after having adduced, in testimony of what he there advances respecting the number three, the doctrine of Pythagoras, he at length exclaims: "Hence receiving this number from nature, we employ it in the worship of the gods." In his treatise too *On Sense and Sensibles*, finding that there are eight most general saps; and again, that there are eight more simple colours, he makes each to be seven, thinking that this number is adapted to fabrication (*δημιουργία*).

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each

each of the others is double, but another is not, this is, because one in each is added to σ . On this account there are three only, and not because there are three symphonies: for there are more symphonies than three; but here there cannot be more than three. These men also resemble the antient Homeric^{*}, who perceived small similitudes, but overlooked such as are great. But some assert there are many such-like particulars, as, for instance, with respect to media, one medium is 9 and another 8; and a verse of 17 feet is equal in number to these. But in syllables they say that 9 ascends on the right hand, but 8 on the left; and that there is an equal interval in letters from α to ω , and in pipes from the most grave sound to the most acute *nete*, the number of which is the equality in the all-various melody of the heavens. But we ought not to perceive things of this kind (for no one will make them the subject of doubt), nor speak concerning them, nor attempt to discover them in things perpetual[†], because they are to be found in things corruptible. But those natures in numbers[‡] which are the subject of praise, and

* That some of the interpreters of Homer (says Syrianus) were not consistent with themselves, and that some of those who endeavoured to imitate the Pythagoreans fell from the true theory of those philosophers, and were led to uncertain and ridiculous conjectures, ought to be granted. But this does not militate against Homer or Pythagoras, or against those who are able to recur to the true speculation of their doctrine. He adds: "Those, therefore, are to be derided who say that 9 and 8 are two media between 12 and 6 (for $12:9::8:6$), because a verse has seventeen syllables; or who assert that the media of two syllables are the causes of verse. It is also ridiculous to make the holes of a pipe to be so many in number, on account of the letters of the alphabet, or to accommodate the twenty-four letters to the entire perfection of the world. For, though there should be one definite cause of these (as in reality there is), yet it is to be considered in a very different manner.

† Eternal natures are orderly disposed through certain divine numbers, but mortal natures through such as are both divine and natural. For, if eternal natures subsist in this manner, they thus subsist naturally. Thus, for instance, the sun through such a portion of time makes a complete revolution, and this always: it, therefore, naturally revolves after this manner. But this time is the number of a thing of this kind. Nature, therefore, imparted being to the sun, in conjunction with such a number; to the moon, with such a number peculiar to it; and in like manner to each of the celestial orbs: but this number is not mathematical, but fabricative and divine; though in mathematical numbers we may behold certain images of this, because posterior numbers always depend upon such as are prior, proceed according to their peculiarity, and shine forth in the last orders of things. Mortal animals also, as far as nature has dominion in them (but it has dominion not always, but for the most part), are so far orderly disposed with proper numbers.

‡ Aristotle openly admits, that in numbers and figures, in colours, and in sensible particulars, there

and the contraries to these, and, in short, the objects of mathematical contemplation, as they are considered by some, and made to be the causes of nature, appear to escape the attention of those who speculate in this manner. For no one of them is a cause according to any of those modes which are defined respecting principles. Yet, as they make it manifest that well being has a subsistence, and that the odd number, the straight, the equal, and powers of certain numbers, are of the co-ordination of the beautiful (for the season of the year and a particular number subsist together), and such other things as they collect from mathematical theorems,—all these possess this power; on which account they resemble casual accidents: for they are indeed accidents, but all of them accord with each other; but the analogous is one: for in each category of being there is the analogous, as, for instance, the straight in length is analogous to the even in superficies; and perhaps the odd in number, and the white in colour. Further still: the numbers * which
are

there is *the good*, and the opposite to *the good*. He also admits this in nature; but he does not openly grant that a better co-ordination of number is the cause of that which is more excellent in nature: but he rather admits, for instance, that hours are prior to the year, and are more causes than number itself, and does not assert this of the numbers of the hours. In this, indeed, he is consistent with himself, as, for the purpose of concealment, he alone directs his attention to numbers of posterior origin. But, says Syrianus, “in a similar manner we must ask Aristotle, whence the hours always subsist after the same manner; for, it is either from Jupiter, or the Sun, or some other of those mundane artificers. They are, therefore, thence measured and orderly disposed through the effective power of numbers: and, in short, why, prior to that which subsists in another, should we not contemplate that which subsists in itself?”

But that Aristotle is not serious in what he now says is evident from hence; that if we admit the contrary, and assert that Aristotle, on beholding good in particulars, neither speaks of the cause of this good, in consequence of not admitting that it has a cause, nor reduces all things to one principle from which they derive their perpetual similitude of subsistence and sameness of progression, we must also necessarily admit that he disjoins beings, and that he forgets what he has said at the conclusion of the twelfth book of this work, “that the domination of many is not good.”

* This is alone urged against ideal numbers, which Aristotle says possess monads which cannot be compared with each other; so that the ideal triad is not a third part of the nine itself, nor the half of the number six itself. If, therefore, says he, ideal numbers are such, they will by no means be the causes of symphonies. For in symphonies similar sounds are equal, and the *nete* is double of the *upate*; and, in short, the tetrad is the half of the octad, and sesquitercian with relation to the triad. He therefore syllogises as follows: Ideal numbers have different monads. Numbers which compose symphonies have not different monads. Ideal numbers,
therefore,

are in forms are not the causes of things harmonic and the like: for those equals in species differ from each other, for the monads also differ; so that, in consequence of these things, forms are not to be introduced. These consequences, therefore, and still more than these, may be collected; but they appear to afford an argument that the patrons of ideas fall into many errors respecting the generation of them, and that they cannot be consistent, because mathematical species are not, as some say, separated from sensibles, nor are these the principles of things.

therefore, do not compose symphonies. Hence, he who asserts that symphonies subsist through these numbers, asserts that which is false.

In answer to this we must again say, that ideal numbers do not consist from monads, so as to become monadic numbers, unless some one is willing to call the ideas of them unities, or things characterized by the nature of *the one*. Nor do they possess the power of immediately constituting lyric symphonies, but this power is rather to be ascribed to those numbers which subsist in divine souls, and in the nature of the universe. And, in short, as we are informed by Syrianus, such things as the Artificer of the universe is said to have produced and orderly disposed, through an energy profoundly one (*ἐναιως*), and to have rendered consonant both to himself and to each other, derive, according to the Pythagoreans, their consonance from ideal numbers.

ADDITIONAL

ADDITIONAL NOTES.

A D V E R T I S E M E N T.

THE design of the following additional notes is to illustrate the Platonic doctrine concerning ideas and the principle of the universe. They are chiefly extracted from what appears to me to be one of the most precious remains of antiquity, the MS. Commentary of Proclus on the Parmenides, and from the works of Plotinus, one of the most sublime of the intellectual philosophers. I shall rejoice if I have been able to add any thing of my own which may contribute to elucidate the conceptions of these divine men, and induce the reader to abandon with generous ardour the grovelling contemplation of sensible objects, profoundly dark and incessantly flowing, for the exalted survey of the all-splendid and ever-permanent forms in the world of mind.

ADDITIONAL NOTES.

Page 30, Note ‡.

NEITHER is multitude unco-ordinated to *the one*, and separated from itself, nor is *the one* unprolific, and destitute of a multitude adapted to it; but this is the leader of secondary monads, and multitude possesses an union accommodated to its nature: for all multitudes, intelligible and intellectual, mundane and supermundane, are suspended from proper monads, and are co-ordinated with each other. But these monads are again suspended from one monad, that the multitude of monads may not be separated from itself, and be multitude alone deprived of union: for it is not lawful that those causes which give union to other things should be divulsed from each other. Thus, the causes which impart life to other things are not destitute of life, nor are the sources of intellect destitute of intelligence, nor are those which illuminate all things with beauty, void of beauty; but they have either life, intellect, and beauty, or something more excellent and divine than these. So that it is necessary that the monads which impart union to other things should be united to each other, or should possess something more excellent than union. There is not, however, any thing more divine than this, except *the one* itself. But if *the one* is prior to these, it is necessary that these monads should be united to each other: for things which participate of *the one* are united. But, if they are united, whence is their union derived, if not from *the one itself*? It is necessary, therefore, that the multitude of unities should subsist from *the one*; that from these unities, both first multitudes and those in a following order should be suspended; and that always things more remote from *the one* should be more multiplied than those which have a prior subsistence.

But at the same time it must be observed that every multitude has a twofold monad, one co-ordinated, and the other exempt. Thus, for instance, in species, we may behold a twofold man, one exempt, viz. the ideal man in the intelligible world, the other participated by the apparent man. Thus, too, the beautiful is twofold,

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that

that which is prior to the many, and that which subsists in the many. And in a similar manner with respect to the equal, the just, and every other form. Hence, a monad subsisting in another, and a monad subsisting by itself, may be seen in the sun and moon, and every other natural form : for it is necessary that those things which subsist in others, and that common and participated natures should have, prior to themselves, that which subsists from itself, and which is imparticipable and exempt. The bond, therefore, which proximately unites multitude is that which is common in multitude. And on this account, man itself, or the ideal man, is different from man subsisting in particulars, or, in other words, con-distributed with the individuals of the human species. And the former of these is eternal, but the latter is partly mortal and partly immortal. The former is intelligible, the latter sensible. As, therefore, every form is twofold, so every whole is twofold : for forms are parts of a certain wholeness. Of wholes, too, one kind is imparticipable, and another participable. And this is also the case with soul : for that which generates the multitude of souls is imparticipable, and that which binds this multitude together is participable soul. Thus also, with respect to intellect, one is imparticipable, and the other participable ; the former producing, and the latter connecting, intellectual multitude. Of beings, therefore, there is likewise a twofold monad, one imparticipable, from which all beings and the number of beings proceed, and the other participable. And lastly, there is a twofold one, this withdrawing itself from multitude, and subsisting ineffably exempt from beings, but that participated by beings.

Page 47, Note †.

That it is necessary that being profoundly united (*or* *or*) should subsist prior to the multitude of beings may be shown by the following logical method. Being is either homonymously predicated of all beings, or synonymously, or it is predicated as from one and to one. But it is impossible that it can be predicated synonymously ; since we say that one thing is more being, and another less : for the more and the less have not any subsistence among things synonymous. But whether being which is profoundly one is predicated homonymously of all things, or whether it subsists as from one and to one, it is necessary that there should be a certain being prior to the multitude of beings.

This also may be shown in a more physical way as follows, and which is adopted by the Elean guest in the Sophista. It is necessary, if beings are many, that so far as they are many they should differ from each other, but that so far as they are beings they should be the same ; which sameness must necessarily either be imparted to all beings from some other nature, or from one among the multitude of beings to the rest. But, if from one among the multitude to the rest, that one will be the first being.

being, but the rest will through it participate of being. But if again from some other nature, that nature, being prior to all, will confer on all the participation of being.

In the third place, this may be evinced as follows, from a more theological principle. Every thing which is participated, since it subsists in others which participate it, has entirely its progression into being from that which is imparticipable; for this is multiplied together with its subject recipients, each of which it generates, and communicates its proper essence to the natures of its participants. But, prior to things participated and mingled with others, it is necessary that things imparticipable and unmingled, and which subsist from themselves, should be established; and that things which have a simplicity of essence should subsist prior to relatives, and which have their being in others. Hence, if these things are true, it is necessary that being itself should subsist prior to the multitude of beings, from which the being in the many is derived, which has a subsistence participated by them. But as, prior to that which participates, and that which is participated, that which is imparticipable subsists, so it is necessary that between the imparticipable and participants that which is participable should subsist. Or how will things which participate be that which they are said to be, if there is nothing which is participated, and which subsists in the participants? Neither, therefore, is there alone that which is participated by the many, but prior to this the imparticipable subsists; nor is there alone that which is imparticipable, but after this there is that which is participated, and which has a co-ordinated subsistence in the many.

Again: that which is being profoundly united, or simply being, is one and many: for every thing posterior to *the one* immediately possesses a representation (*εμπεριστασις*) of multitude. But in one order of beings this multitude is occult, and characterized by the nature of *the one*. In another order, it is multitude unfolding itself into light: and in another, it has now proceeded, and is fully unfolded. And the progression of it is again different in different orders, and there is not in all the same mode of separation. But since there is every where a monad prior to multitude, it is necessary to suspend all beings from their proper monad: for, in bodies, that which subsists as a whole (*viz.* the body of the universe) precedes those which rank as parts, and, being itself connected and a whole, comprehends all the distributed bodies in the world. Thus also in natures, one nature, and which ranks as a whole, subsists prior to the many: for, through this one nature, partial natures, which are contrary to each other, are often at the same time circularly led as it were into union and sympathy. And in souls, the monad of souls is established in an order more ancient than the multitude of souls; and about this as a centre all souls converge: divine souls indeed, in the first place, the attendants of these in the second place, and the co-attendants (*συννοηταί*) of these in a third order, as Socrates asserts in the *Phædrus*. In a similar manner, too,

in intellects, one whole and imparticipable intellect, first emerging into light from natures profoundly united, generates after itself the whole of intellectual multitude, and every indivisible essence. It is necessary, therefore, that prior to all beings there should be the monad of being, through which all beings are co-ordinated with each other, as also intellects, souls, natures, and bodies, and every thing which is in any respect said to be. For, let *the one* be the exempt cause of union; but every thing so far as one is made to be one through this. Our inquiry however is, what connecting and uniting monad they possess, so far as they are beings: for every number is elevated (*αυξησεται*) to a monad adapted to and co-ordinated with it, and from which it derives its subsistence and its appellation, neither synonymously nor casually, but as from one, and as referred to one. So that beings also are from one monad, which is called the first being, through which they derive their order, and are denominated beings; and from this all beings are in sympathy with each other, and in a certain respect are the same, so far as they proceed from one being. Parmenides, looking to this union of all beings, thought proper to call all things one; (that being the most principal and the primary all, which is united to *the one*. It is likewise simply all :) for all things, so far as they participate of one being, are in a certain respect the same with each other.

Page 68, Note †.

The manner in which forms are participated is neither corporeal nor material, but is exempt from all the modes of participation which are peculiar to secondary and partial natures: for sensibles do not participate of forms or ideas in the same manner as one body participates of another; since, in this case, the participant either draws the whole into itself or a part. Thus, when we eat we partake the whole of the food: for that which is participated, being the lesser, is able to proceed into that which is greater than itself; and since we are composed from elements which rank as *wholes*, we participate a part of each of them: for the fire which is in us is from the *whole* sphere of fire; and in a similar manner the water and each of the other elements which we contain. And, as Socrates says in the *Philebus*, we participate of *wholes*, but wholes do not participate of us. But no sensible nature can receive the whole power of idea, viz. its eternal efficacy, and its perfect life and intelligence. And yet we perceive, that whatever is in the same species equally receives the ideal property imparted to that species; so that not corporeally, but in a very different manner, idea is in one respect totally, and in another not totally, in its participants. Likewise, since ideas abide in themselves, they are able to be totally present at the same time with many things separated from each other;—a property which cannot belong to bodies, since they require a certain place, nor to corporeal powers, which are inseparable from particular subjects.

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In short, he who investigates whole and part not corporeally, but in such a manner as is adapted to intelligible and immaterial forms, will perceive that every sensible nature participates both of the whole and a part of its paradigm: for, because that ranks as cause, and sensibles as things caused, and effects can by no means receive the whole power of their causes, hence sensibles do not participate the whole of idea. Thus, for instance, the characteristic peculiarity of the beautiful is every where and in all things, but in some things intellectually, and in others materially. And it is evident, that the participations of the more perfect natures participate more than those of the natures which are remote from perfection: and some according to more, but others according to fewer, powers: for, let the definition of the beautiful itself be this, *An intellectual vital form, the cause of symmetry to all things.* *Form*, therefore, and that which is effective of symmetry are present with every thing beautiful: for this was the characteristic peculiarity of the beautiful. So that every thing beautiful participates the *whole* of this peculiarity; but its *intellectual* power is not present with every thing beautiful, but with a nature to which soul belongs. For the beautiful in this is uniform. But neither is its *vital* prerogative inherent in every thing beautiful, but in a celestial nature (for whatever the heavens contain is full of life), and whatever there may be of this kind in generated natures. In gold, also, and certain stones we behold the splendor of the beautiful. Some things, therefore, participate of its intellectual and vital powers; but others of its vital separate from its intellectual; and others, again, of its characteristic peculiarity alone. And things more immaterial receive more powers of the beautiful than such as are material. In this manner, therefore, it is proper to address those who are able to behold the incorporeal essence of ideas. But to those who are of opinion that forms are participated corporeally, we must say, that if this were the case, one and the same thing must be totally present at the same time with many things separate from each other; which would be of all things the most absurd. For if a finger, or any other corporeal part, or any corporeal power, was at the same time in many things separate from each other, it would be separate from itself: for power which is in a subject will thus belong to other subjects, and will be separate from itself, since it will subsist from both, not being able to be separated from either. But, again, that the whole of a body should be in different places at the same time is impossible: for by division it appears that there may be many bodies in one place. Thus, since one body can subsist in one place, and many bodies in many places, the medium between these will be, many bodies in one place. The sphere of the fixed stars, and the spheres in which the planets are carried, are bodies of this kind; for they consist of pure immaterial light. But that the same body should be in many places at the same time is impossible. It is therefore impossible for a whole to be corporeally present with many subjects at the same time.

That

That the reader may be further enabled to conceive the manner in which not only ideas but all incorporeal natures are present with bodies, the following extracts from the metaphysical auxiliaries (*αφορμαὶ πρὸς τὰ νοήματα*) of Porphyry are added.

Every body is in place; but nothing essentially incorporeal, or any thing of this kind, subsists in place.

Things essentially incorporeal, because they are more excellent than all body and place, are every where, not with interval, but impartibly*.

Things essentially incorporeal are not locally present with bodies, but they are present with them whenever they are willing; and this by verging to them, so far as they are naturally adapted to verge. Hence, not being locally present with them, they are present by habitude, (i. e. by proximity or alliance).

Things essentially incorporeal are not present in hypostasis (i. e. subsistence) and essence; for they are not mingled with bodies; but, by an hypostasis from inclination, they impart a certain power proximate to bodies: for inclination gives subsistence to a certain secondary power proximate to bodies.

Soul is a certain medium between an essence indivisible and divisible about bodies; but intellect is an impartible essence alone. And qualities and material forms are divisible about bodies.

Not every thing which acts on another, effects that which it effects by approximation and contact; but those things which act from approximation and contact use approximation according to accident.

Soul is bound to body by converting itself to the passions originating from body; and it is again liberated by becoming impassive to body.

That which nature has bound, nature also dissolves, and that which soul has bound, soul also dissolves. Nature, indeed, bound body in soul, but soul bound herself in body. Hence nature liberates body from soul; but soul liberates herself from body.

Death therefore is twofold; one, with which all men are acquainted, when the body is liberated from the soul; but the other peculiar to philosophers, when the soul is liberated from the body; nor does the one entirely follow the other.

We do not understand similarly in all things, but in a manner accommodated to the essence of each. Thus, in intellect, we understand intellectually; in soul, rationally; in plants, spermatically; in bodies, idolically, or after the manner of an image; and, in that which is above all things, superintellectually and superessentially.

Incorporeal hypostases in descending are divided and multiplied about individuals, through a subjection of power; but in ascending they are united, and return to a collected subsistence through abundance of power.

* i. e. Without parts.

The homonymous not only takes place in bodies, but life also ranks among things which are multifariously predicated : for there is one life of a plant, another of that which is animated, another of soul, another of that which is intellectual, and another of that nature which is above intellect. For these also live, though nothing which subsists from them obtains a similar life.

The passion of bodies is different from that of incorporeals : for the passion of bodies is with mutation ; but of soul the aptitudes and the passions are energies. They are not, however, similar to the heat and cold of bodies. Hence, if the passion of bodies is with mutation, we must say that all incorporeal natures are impassive. For, things which are separated from matter and bodies are in energy the same ; but things which approach to matter and bodies are themselves, indeed, impassive, but the natures in which they are beheld suffer. For, when the animal perceives, the soul is similar to separate harmony, moving from itself the harmonised chords, but the body is similar to the harmony in the chords which is inseparable from them. The cause of motion is the animal, in consequence of its being animated, but it is analogous to the musician through its harmonic arrangement ; but the bodies which are struck through sensitive motion are similar to the harmonised chords : for there also separate harmony does not suffer, but the chord. And the musician indeed moves, according to the harmony which he contains ; yet the chord would not be musically moved, though the musician should be willing, unless this were dictated by harmony.

The appellation of incorporeals is not thus denominated, like bodies, according to the communion of one and the same genus, but according to a naked privation with respect to bodies. Hence, nothing prevents some of them from subsisting as beings, and others as non-beings, some from being prior and others posterior to bodies, and some from being separate and others inseparable from a corporeal nature. Likewise nothing prevents some of them from subsisting from themselves, but others from being indigent of other natures to their subsistence ; and some from being the same with self-motive energies and lives, but others from subsisting together with certain vital energies. For they are denominated according to a negation of that which they are not, and not according to an affirmation of that which they are.

In incorporeal lives while progressions are effected, prior natures remain stable and firm, nothing belonging to them being corrupted or changed in giving subsistence to things inferior ; so that, neither are the things which thence subsist produced with a certain corruption or mutation, nor does any thing belonging to them subsist in such a manner as generation, which participates of corruption and mutation. They are, therefore, unbegotten and incorruptible, and on this account are produced in an unbegotten and incorruptible manner.

Concerning that which is beyond intellect many things are asserted by intelligence :

gence; but it is beheld by a privation of intelligence better than by intellectual perception. Just as, with respect to him who is asleep, many things are asserted through vigilance, of which the knowledge and apprehension is obtained through sleep. For the similar is known by the similar, because all knowledge is an assimilation to the object of knowledge.

The subsistence of body does not in any respect prevent that which is essentially incorporeal from being present where it wishes to be, and as it wills. For, as that which is void of bulk is incomprehensible by body, and has no relation whatever to it, so that which subsists with bulk cannot oppose (*ανειπποσθητον*) that which is incorporeal, but lies like non-entity before it. Nor does an incorporeal nature pervade locally where it pleases; for place is consubsistent with bulk. Nor is it contracted by the presence of bodies. For, whatever subsists in that which has bulk is able to be contracted by it, and to make a transition locally. But that which is entirely without bulk and magnitude can neither be detained by bulk, and does not partake of local motion. Hence, by a certain disposition it is found to be there where it is inclined to be, at the same time being every where and no where in place. By a certain disposition, therefore, it is either above the heavens, or is contained in some part of the universe. However, when it is contained in a certain part of the world, it is not visible to the eyes, but its presence becomes apparent from its works.

That which is incorporeal when it is detained in body, is not so inclosed as a wild beast in a cage; for no body is able thus to inclose and comprehend it: nor as any liquor or vapour in a bladder. But it is requisite that an incorporeal essence should give subsistence to powers verging from a union with its nature to that which is external; by which powers when it descends it becomes connected with body. Hence, its detention in body is effected through an ineffable extension of itself, and on this account nothing else binds it, but itself binds itself. Neither, therefore, is it liberated when the body is wounded and corrupted, but when itself turns itself from corporeal passion.

No whole and perfect essence is converted to its own progeny; but all perfect natures are led back to the causes by which they were generated, even as far as to the mundane body. For, being perfect, it is elevated to the mundane soul which is intellectual, and through this is circularly moved. But the soul of this body is elevated to intellect, and intellect to that which is first. All things, therefore, extend themselves to this beginning from that which is last, according to the peculiar ability of each. But the reduction to that which is first is either proximate or remote. Hence, these are not only said to aspire after divinity, but also to enjoy him as far as they are able. But in partial natures, and which are able to verge to many things, a conversion to their progeny belongs. Hence, in these guilt, in these disgraceful perfidy is found. Matter, therefore, defiles these, because they decline to it,

it, at the same time that they possess the power of converting themselves to a divine nature. So that perfection gives subsistence to secondary from prior natures, preserving them converted to things first; but the imperfect converts things first to things subordinate, and causes them to love natures which have apostatized prior to themselves.

God, intellect, and soul are every where, because they are no where; but God is every where and no where, in all the things posterior to him, and alone is as he is, and as he wills. Intellect is in God indeed, but is every where and no where in things posterior to itself; and soul is in intellect and in God, but is every where and no where in body: but body is in soul, in intellect, and in God. And, though all beings and non beings proceed from and subsist in God, yet he is neither beings, nor does he subsist in them: for, if he was alone every where, he would be all things, and in all; but since he is also no where, all things are generated through him; and they are contained in him, because he is every where; but are different from him, because he is no where. In like manner intellect, being every where and no where, is the cause of souls and of things posterior to souls; and it is neither soul, nor the natures posterior to soul, nor does it subsist in these; because it is not only every where in things posterior to itself, but also no where. And soul is neither body, nor in body, but is the cause of body; because, being every where with respect to body, it is no where. And this progression of things extends as far as to that which is neither able to be at the same time every where, nor yet no where, but partially participates of each.

Page 294, Note *.

Aristotle appears in his theological writings to have ascended no higher than intelligible intellect, or the Phanes of Orpheus, and to have called this the first cause, as being the first effable, all beyond this being according to ancient theologians ineffable. But that Aristotle knew there was something even beyond this, is evident from the following citation from the second book of the Commentaries of Simplicius in Arist. de Cælo, p. 118.—*Ὅτι μὲν γὰρ νοεῖ τι καὶ ὑπὲρ τοῦ νοῦν ὁ Ἀριστοτέλης, καὶ ὑπὲρ τὴν οὐσίαν, δηλὸς ἐστὶ παρὰ τοῖς ἐσχάτοις τοῦ βιβλίου περὶ προσευχῆς, διαρρηδὴν λεγῶν, ὅτι ὁ Θεὸς ἢ νοὺς ἐστίν, ἢ τι καὶ ὑπὲρ νοῦν.* i. e. "That Aristotle knew that there is also something above intellect and essence is evident from the latter part of his book On Prayer, in which he clearly says, that God is either intellect, or something above intellect."

Page 305, Note †.

That it is not proper to stop at conceptions of posterior origin, or, in modern language, abstract ideas; i. e. notions gained by an abstraction from sensible particulars,

but that we should proceed to those essential reasons which are allotted a perpetual subsistence within the soul, is evident to those who are able to survey the nature of things. For, whence is man able to collect into one by reasoning the perceptions of many senses, and to consider one and the same unapparent form prior to things apparent, and separated from each other; but no other animal that we are acquainted with, surveys this something common, for neither does it possess a rational essence, but alone employs sense, and appetite, and imagination? Whence, then, do rational souls generate these universals, and recur from the senses to that which is the object of opinion? It is because they essentially possess the gnostically productive principles of things: for, as nature possesses a power productive of sensibles, by containing reasons, or productive principles, and fashions and connects sensibles, so as by the inward eye to form the external, and in a similar manner the finger, and every other particular; so he who has a common conception of these, by previously possessing the reasons of things, beholds that which each possesses in common. For he does not receive this common something from sensibles; since that which is received from sensibles is a phantasm, and not the object of opinion. It likewise remains within such as it was received from the beginning, that it may not be false, and a non-entity, but does not become more perfect and venerable, nor does it originate from any thing else than the soul. Indeed, it must not be admitted that nature in generating generates by natural reasons and measures, but that soul in generating does not generate by animatic reasons and causes. But if matter possesses that which is common in the many, and this something common is essential, and more essence than individuals; for this is perpetual, but each of those is corruptible, and they derive their very being from this, since it is through form that every thing partakes of essence,—if this be the case, and soul alone possesses things common which are of posterior origin (*ὕστερογενὴ κοινὰ*), do we not make the soul more ignoble than matter? For the form which is merged in matter will be more perfect and more essence than that which resides in the soul; since the latter is of posterior origin, but the former is perpetual; and the one is after and connective of the many. To which we may add, that a common phantasm in the soul derives its subsistence from a survey of that which is common in particulars. Hence it tends to this; for every thing adheres to its principle, and is said to be nothing else than a predicate; so that its very essence is to be predicated of the many.

Further still: the universal in the many is less than each of the many; for by certain additions and accidents it is surpassed by every individual. But that which is of posterior origin (i. e. universal abstracted from particulars) comprehends each of the many. Hence it is predicated of each of these; and that which is particular is contained in the whole of this universal. For this something common, or abstract idea, is not only predicated of that something common in an individual, but likewise

wife of the whole subject. How then can it thence derive its subsistence, and be completed from that which is common in the many? For, if from the many themselves, where do we see infinite men, of all which we predicate the same thing? And if from that which is common in the many, whence is it that this abstract idea is more comprehensive than its cause? Hence it has a different origin, and receives from another form this power which is comprehensive of every individual; and of this form the abstract idea which subsists in opinion is an image, the inward cause being excited from things apparent. To which we may add, that all demonstration, as Aristotle has shown in his *Last Analytics*, is from things prior, more honourable, and more universal. How, therefore, is universal more honourable, if it is of posterior origin? For, in things of posterior origin, that which is more universal is more unessential; whence species is more essence than genus. The rules, therefore, concerning the most true demonstration must be subverted, if we alone place in the soul universals of posterior origin: for these are not more excellent than, nor are the causes of, nor are naturally prior to, particulars. If, therefore, these things are absurd, it is necessary that essential reasons should subsist in the soul prior to universals which are produced by an abstraction from sensibles. And these reasons or productive powers are indeed always exerted, and are always efficacious in divine souls; and in the more excellent orders of beings; but in us they are sometimes dormant, and sometimes in energy. Again: that the soul contains essential forms, and that, unless this be admitted, there can be no such thing as science, may be thus proved.

If dianoëtic and intellectual are better than sensible knowledge, it is necessary that the things known by the dianoëtic power, and by intellect, should be more divine than those which are known by sense: for, as the gnostic powers which are co-ordinated to beings are to each other, such also is the mutual relation of the things which are known. If, therefore, the dianoëtic power and intellect speculate separate and immaterial forms, and likewise things universal, and which subsist in themselves, but sense contemplates things partible, and which are inseparable from subjects, it is necessary that the spectacles of the dianoëtic power and of intellect should be more divine and more eternal. Universals, therefore, are prior to particulars, and things immaterial to things material. Whence, then, does the dianoëtic power receive these? for they do not always subsist in us according to energy. It is however necessary, that things in energy should precede those in capacity, both in things intellectual and in essences. Forms, therefore, subsist elsewhere, and prior to us, in divine and separate natures, through whom the forms which we contain derive their perfection. But these not subsisting, neither would the forms in us subsist: for they could not be derived from things imperfect: since it is not lawful that more excellent natures should be either generated or perfected from such as are subordinate

nate. Whence, too, is this multitude of forms in the multitude of souls derived? For it is every where necessary, prior to multitude, to conceive a monad from which the multitude proceeds: for, as the multitude of sensibles was not generated, except from an unity, which is better than sensibles, and which gave subsistence to that which is common in particulars; so, neither would the multitude of forms subsist in souls, such as the just itself, the beautiful itself, &c. which subsist in all souls in a manner accommodated to the nature of soul, without a certain generating unity, which is more excellent than this animastic multitude: just as the monad from which the multitude of sensibles originates is superior to a sensible essence, comprehending unitedly all the variety of sensibles. Is it not also necessary that, prior to self-motive natures, there should be an immoveable form? For as self-motive reasons transcend those which are alter-motive, or moved by others, after the same manner immoveable forms, and which energise in eternity, are placed above self-motive forms which are conversant with the circulations of time: for it is every where requisite that a stable should precede a moveable cause. If, therefore, there are forms in souls which are many, and of a self-motive nature, there are, prior to these, intellectual forms. In other words, there are immoveable prior to self-motive natures, such as are monadic prior to such as are multiplied, and the perfect prior to the imperfect: It is also requisite that they should subsist in energy; so that if there are not intellectual, neither are there animastic forms: for nature by no means begins from the imperfect and the many; since it is necessary that multitude should proceed about monads, things imperfect about the perfect, and things moveable about the immoveable. But if there are not forms essentially inherent in soul, there is no place left to which any one can turn his dianoëtic power, as Parmenides in Plato very justly observes: for phantasy and sense necessarily look to things con-nascent with themselves. But of what shall we possess a dianoëtic or scientific knowledge, if the soul is deprived of forms of this kind? For we shall not make our speculation about things of posterior origin, since these are more ignoble than sensibles themselves, and the universals which they contain. How then will the objects of knowledge, which are co-ordinate to the dianoëtic power, be subordinate to those which are known by sense? It remains, therefore, that we shall not know any thing else than sensibles. But if this be the case, whence do demonstrations originate? Demonstrations, indeed, are from those things which are the causes of the things demonstrated, which are prior to them according to nature, and not with relation to us, and which are more honourable than the conclusions which are unfolded from them. But the things from which demonstrations are formed are universals, and not particulars. Universals, therefore, are prior to, and are more causal and more honourable than, particulars. Whence, likewise, are definitions? For definition proceeds through the essential reason of the soul: for we first define that

that which is common in particulars, possessing within, that form, of which the something common in these is the image. If, therefore, definition is the principle of demonstration, it is necessary that there should be another definition prior to this, of the many forms and essential reasons which the soul contains: for since, as we have before said, the just itself is in every soul, it is evident that there is something common in this multitude of the just, whence every soul, knowing the reason of the just contained in its essence, knows, in a similar manner, that which is in all other souls. But, if it possesses something common, it is this something common which we define, and this is the principle of demonstration, and not that universal in the many, which is material, and in a certain respect mortal, being co-ordinated with the many: for, in demonstrations and definitions, it is requisite that the whole of that which is partial should be comprehended in universal and definition. But the definitions of things common in particulars do not comprehend the whole of particulars: for, can it be said that Socrates is the whole of rational mortal animal, which is the definition of man? since he contains many other particulars, which cause him to possess characteristic peculiarities. But the reason of man in the soul comprehends the whole of every individual; for it comprehends uniformly all the powers which are beheld about the particulars of the human species: And in a similar manner with respect to animal: for, indeed, the universal in particulars is less than the particulars themselves, and is less than species; since it does not possess all differences in energy, but in capacity alone; whence, also, it becomes as it were the matter of the succeeding formal differences. But the reason of man in our soul is better and more comprehensive; for it comprehends all the differences of man unitedly, and not in capacity, like the universal in particulars, but in energy. If, therefore, definition is the principle of demonstration, it is requisite that it should be the definition of a thing of that kind, which is entirely comprehensive of that which is more partial. But of this kind are the forms in our soul, and not the forms which subsist in particulars. These, therefore, being subverted, neither will it be possible to define. Hence, the definitive together with the demonstrative art will perish, abandoning the conceptions of the human mind. The divisive art, also, together with these will be nothing but a name: for the whole employment of divisions is to separate the many from the one, and to distribute things pre-subsisting unitedly in the whole, into their proper differences, not adding the differences externally, but contemplating them as inherent in the genera themselves, and as dividing the species from each other. Where, therefore, will the work of this art be found, if we do not admit that there are essential forms in our soul? For he who supposes that this art is employed in things of posterior origin, i. e. forms abstracted from sensibles, perceives nothing of the power which it possesses: for, to divide things of posterior origin, is the business of the divisive art, energising according

ing to opinion ; but, to contemplate the essential differences of the reasons in the soul, is the employment of dianoëtic and scientific division, which also unfolds united powers, and perceives things more partial branching forth from such as are more total. By a much greater priority, therefore, to the definitive and demonstrative arts will the divisive be entirely vain, if the soul does not contain essential reasons : for definition is more venerable, and ranks more as a principle, than demonstration, and, again, division than definition : for the divisive gives to the definitive art its principles, but not vice versa. The analytic art, also, must perish together with these, if we do not admit the essential reasons of the soul. For, as we have before observed in the notes to the thirteenth book, the analytic is opposed to the demonstrative method as resolving from things caused to causes, but to the definitive, as proceeding from composites to things more simple, and to the divisive, as ascending from things more partial to such as are more universal. So that, those methods being destroyed, this also will perish. If, therefore, there are not forms or ideas, neither shall we contain the reasons of things. And, if we do not contain the reasons of things, neither will there be the dialectic methods according to which we obtain a knowledge of things, nor shall we know where to turn the dianoëtic power of the soul.

Page 321, Note †.

The following additional arguments in defence of the Platonic doctrine of ideas are given for the sake of the liberal and Platonic reader. The whole is nearly extracted from the MS. Commentary of Proclus on the Parmenides.

This visible world is either self-subsistent, or it derives its subsistence from a superior cause. But if it is admitted to be self-subsistent, many absurd consequences will ensue : for it is necessary that every thing self-subsistent should be impartible ; because, every thing which makes and every thing which generates is entirely incorporeal. For bodies make through incorporeal powers ; fire by heat, and snow by coldness. But if it is necessary that the maker should be incorporeal, and in things self-subsistent the same thing is the maker and the thing made, the generator and the thing generated, that which is self-subsistent will be perfectly impartible. But the world is not a thing of this kind : for every body is every way divisible, and consequently is not self-subsistent. Again : every thing self-subsistent is also self-energetic. For, as it generates itself, it is by a much greater priority naturally adapted to energise in itself, since to make and to generate are no other than to energise. But the world is not self-motive, because it is corporeal. No body, therefore, is naturally adapted to be moved, and at the same time to move according to the whole of itself. For neither can the whole at the same time heat itself, and be heated by itself : for because it is heated, it will not yet be hot, in consequence
of

of the heat being gradually propagated through all its parts ; but because it heats, it will possess heat, and thus the same thing will be, and yet will not be hot. As, therefore, it is impossible that any body can move itself according to internal change, neither can this be effected by any other motion. And, in short, every corporeal motion is more similar to passion than to energy ; but a self-motive energy is immaterial and impartible : so that, if the world is corporeal, it will not be self-motive. But if not self-motive, neither will it be self-subsistent. And if it is not self-subsistent, it is evident that it is produced by another cause.

For again : that which is not self-subsistent is twofold, viz. it is either better than, or inferior to, cause. And that which is more excellent than cause*, as is the ineffable principle of things, has something posterior to itself, such as is a self-subsistent nature. But that which is subordinate to cause is entirely suspended from a self-subsistent cause. It is necessary, therefore, that the world should subsist from another more excellent cause. But with respect to this cause, whether does it make according to free will and the reasoning energy, or produce the universe by its very essence† ? for, if according to free will, its energy in making will be unstable and ambiguous, and will subsist differently at different times. The world therefore will be corruptible : for that which is generated from a cause moving differently at different times, is mutable and corruptible. But if the cause of the universe operated from reasoning and inquiry in producing the world, his energy could not be spontaneous and truly his own ; but his essence would be similar to that of the artificer, who does not derive his productions from himself, but procures them as something adventitious by learning and inquiry. Hence we infer that the world is eternal, and that its maker produced it by his very essence ; for, in short, every thing which makes according to free will has also the essential energy. Thus, our soul, which energises in many things according to free will, imparts at the same time life to the body by its very essence, which life does not depend on our free will ; for, otherwise, the animal from every adverse circumstance would be dissolved, the soul on such occasions condemning its association with the body. But not every thing which operates from its very essence, has also another energy according to free will. Thus, fire heats by its very essence alone, but produces nothing from the energy of will ; nor is this effected by snow, nor, in short, by any body, so far as body. If, therefore, the essential energy is more extended than that of free will, it is evident that it proceeds from a more venerable and elevated cause. And this very properly : for the creative energy of natures that operate from their very essence is unattended with anxiety. But it is especially necessary to con-

* This is demonstrated by Proclus in his Elements of Theology.

† This mode of operation we have explained in a note to the twelfth book.

ceive

ceive an energy of this kind in divine natures; since we also then live more free from anxiety, and with greater ease, when our life is divine, or according to virtue. If, therefore, there is a cause of the universe operating from his very essence, he is that primarily which his production is secondarily; and that which he is primarily he imparts in a secondary degree to his production. Thus, fire both imparts heat to something else, and is itself hot, and soul imparts life, and possesses life; and this reasoning will be found to be true in every thing which operates essentially. The cause of the universe, therefore, fabricating from his very essence, is that primarily which the world is secondarily. But, if the world is full of all-various forms, these will subsist primarily in the cause of the world: for it is the same cause which gave subsistence to the sun and moon, to man and horse. These, therefore, are primarily in the cause of the world; another sun besides the apparent, another man, and, in a similar manner, every other form. There are, therefore, forms prior to sensibles, and demiurgic causes of the phænomena pre-subsisting in the one cause of the universe.

But if any one should say that the world has indeed a cause, yet not producing, but final, and that thus all things are orderly disposed with relation to this cause, it is so far well indeed, that they admit the good to preside over the universe. But, it may be asked, whether does the world receive any thing from this cause, or nothing according to desire? for, if nothing, the desire by which it extends itself towards this cause is vain. But if it receives something from this cause, and this cause not only imparts good to the world, but imparts it essentially, by a much greater priority, it will be the cause of existence to the universe, that it may impart good to it essentially; and thus he will not only be the final, but the producing cause of the universe.

In the next place, let us direct our attention to the phænomena, to things equal and unequal, similar and dissimilar, and all such sensible particulars as are by no means truly denominated: for where is there equality in sensibles which are mingled with inequality? where similitude in things filled with dissimilitude? where the beautiful among things of which the subject is base? where the good in things in which there is capacity and the imperfect? Each of these sensible particulars, therefore, is not that truly which it is said to be: for, how can things, the nature of which consists in the impartible and in privation of interval, subsist perfectly in things partible, and endued with interval? But our soul is able, both to conceive and generate things far more accurate and pure than the phænomena. Hence, it corrects the apparent circle, and points out how far it falls short of the perfectly accurate. And it is evident that in so doing it beholds another form more beautiful and more perfect than this: for, unless it beheld something more pure, it could not say that this is not truly beautiful, and that is not in every respect equal. If, therefore,

therefore, a partial soul such as ours is able to generate and contemplate in itself things more perfect than the phænomena, such as the accurate sphere and circle, the accurately beautiful and equal, and, in a similar manner, every other form, but the cause of the universe is neither able to generate, nor contemplate, things more beautiful than the phænomena, how is the one the fabricator of the universe, but the other of a part of the universe? For a greater power is effective of things more perfect, and a more immaterial intellect contemplates more excellent spectacles. The maker of the world, therefore, is able both to generate and understand forms much more accurate and perfect than the phænomena. Where, then, does he generate, and where does he behold them? Evidently, in himself: for he contemplates himself. So that, by beholding and generating himself, he at the same time generates in himself, and gives subsistence to forms more immaterial and more accurate than the phænomena.

In the third place, if there is no cause of the universe, but all things are from chance, how are all things co-ordinated to each other, and how do things perpetually subsist? And whence is it, that all things are thus generated according to nature with a frequency of subsistence? for whatever originates from chance does not subsist frequently, but seldom. But if there is one cause, the source of co-ordination to all things, and this cause is ignorant of itself, must there not be some nature prior to this, which, by knowing itself, imparts being to this cause? for it is impossible that a nature which is ignorant should be more excellent than that which has a knowledge of itself. If, therefore, this cause knows itself, it is evident that, knowing itself to be a cause, it must also know the things of which it is the cause; so that it will also comprehend the things which it knows. If, therefore, intellect is the cause of the universe, it also co-ordinates all things to each other: for there is one artificer of all things. But the universe is various, and all its parts do not participate either of the same dignity or order. Who is it then that measures the dignity of these, except the power that gave them subsistence? Who distributed every thing in a convenient order, and fixed it in its proper seat; the sun here, and there the moon, the earth here, and there the mighty heaven, except the being by whom these were produced? Who gave co-ordination to all things, and produced one harmony from all, except the power who imparted to every thing its essence and nature? If, therefore, he orderly disposed all things, he cannot be ignorant of the order and rank which every thing maintains in the universe: for to operate in this manner would be the province of irrational nature, and not of a divine cause, and would be the characteristic of necessity, and not of intellectual providence. Since, if, intellectually perceiving himself, he knows himself, but knowing himself and the essence which he is allotted, he knows that he is an immoveable cause, and the object of desire to all things, he will also know the natures to which

he is desirable: for he is not desirable from accident, but essentially. He will therefore either be ignorant of what he is essentially, or, knowing this, he will also know that he is the object of desire; and, together with this, he will know that all things desire him, and what the natures are by which he is desired: for, of two relatives, to know one definitely, and the other indefinitely, is not the characteristic of science, and much less of intellectual perception. But, knowing definitely the things by which he is desired, he knows the causes of them, in consequence of beholding himself, and not things of a posterior nature. If, therefore, he does not in vain possess the causes of all things, he must necessarily, according to them, bound the order of all things, and thus be of all things the immoveable cause, as bounding their order by his very essence.

But whether shall we say that, because he designed to make all things, he knew them, or, because he understands all things, on this account he gave subsistence to all things? But if, in consequence of designing to make all things, he knows all things, he will possess inward energy, and a conversion to himself subordinate to that which proceeds outwardly, and his knowledge of beings will subsist for the sake of things different from himself. But if this is absurd, by knowing himself he will be the maker of all things. And, if this be the case, he will make things external similar to those which he contains in himself: for such is the natural order of things, that externally proceeding should be suspended from inward energy, the whole world from the all-perfect monad of ideas, and the parts of the visible universe from monads which are separated from each other.

In the fourth place, we say that man is generated from man, and from every thing its like. After what manner therefore are they generated? for you will not say that the generation of these is from chance: for neither nature nor divinity makes any thing in vain. But, if the generation of men is not from chance, whence is it? You will say, It is evidently from seed. Let it be then admitted, that man is from seed; but seed possesses productive powers in capacity, and not in energy. For, since it is a body, it is not naturally adapted to possess productive powers impartibly and in energy: for every where a subsistence in energy precedes a subsistence in capacity; since, being imperfect, it requires the assistance of something else endued with a perfective power. This something else you will say is the nature of the mother; for this perfects and fashions the offspring by its productive powers. For the apparent form of the mother does not make the infant, but nature, which is an incorporeal power and the principle of motion. If, therefore, nature changes the productive powers of seed from capacity to a subsistence in energy, nature must herself possess these productive powers in energy. Hence, being irrational and without imagination, she is at the same time the cause of physical reasons. As the nature of man, therefore, contains human productive powers,
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does not also nature in a lion contain those of the lion ; as, for instance, the reasons or productive powers of the head, the hair, the feet, and the other parts of the lion ? Or, whence, on shedding a tooth, does another grow in its place, unless from an inherent power which is able to make the teeth ? How likewise does it at the same time make bone and flesh, and each of the other parts ? for the same thing energising according to the same, would not be able to fashion such a variety of organization. But does not nature in plants also possess productive powers as well as in animals ? or shall we not say that, in these likewise, the order of generation and the lives of the plants evince that they are perfected from orderly causes ? It is evident, therefore, from the same reasoning, that the natures of these also comprehend the apparent productive powers. Let us then ascend from these to the one nature of the earth, which generates whatever breathes and creeps on its surface, and which by a much greater priority contains the productive powers of plants and animals. Or whence the generation of things from putrefaction ? (for the hypothesis of the experimentalists is weak and futile.) Whence is it that different kinds of plants grow in the same place, without human care and attention ? Is it not evident that it is from the *whole nature* of the earth, containing the productive powers of all these in herself ? And thus proceeding, we shall find that the nature in each of the elements and celestial spheres comprehends the productive powers of the animals which it contains. . And if from the celestial spheres we ascend to the nature of the universe itself, we may also inquire respecting this, whether it contains forms or not, and we shall be compelled to confess, that in this also the productive and motive powers of all things are contained : for whatever is perfected from inferior subsists in a more excellent and perfect manner from more universal natures. The nature of the universe, therefore, being the mother of all things, comprehends the productive powers of all things ; for, otherwise, it would be absurd that art, imitating natural reasons, should operate according to productive principles, but that nature herself should energise without reasons, and without inward measures. But, if nature contains productive principles, it is necessary that there should be another cause prior to nature, which is comprehensive of forms : for nature verging to bodies energises in them, just as if we should conceive an artist verging to pieces of timber, and inwardly, by various operations, reducing them to a certain form ; for thus nature, merged together with and dwelling in corporeal masses, inspires them with her productive powers and with motion ; since things which are moved by others require a cause of this kind, a cause which is properly irrational indeed, that it may not depart from bodies, which cannot subsist without a cause continually residing with them, but containing the productive powers of bodies, that it may be able to preserve all things in their proper boundaries, and move every thing in a convenient manner. Nature, therefore, belongs to other things, being merged in,

or co-ordinated with, bodies. But it is requisite that the most principal and proper cause should be exempt from its productions: for, by how much more the maker is exempt from the thing made, by so much the more perfectly and purely will he make. And, in short, if nature is irrational, it requires a leader. There is therefore something prior to nature, which contains productive powers, and from which it is requisite that every thing in the world should be suspended. Hence a knowledge of generated natures will subsist in the cause of the world more excellent than the knowledge which we possess; so far as this cause not only knows, but gives subsistence to, all things; but we possess knowledge alone. But if the demiurgic cause of the universe knows all things, if he beholds them externally, he will again be ignorant of himself, and will be subordinate to a partial soul; but, if he beholds them in himself, he will contain in himself all forms, both intellectual and gnostic.

In the fifth place, things produced from an immoveable cause are immoveable and without mutation; but things produced from a moveable cause are again moveable and mutable, and subsist differently at different times. If this be the case, all such things as are essentially eternal and immutable must be the progeny of an immoveable cause; for, if from a moveable cause, they will be mutable; which is impossible. Are not, therefore, the form of man and the form of horse from a cause, if the whole world subsists from a cause? From what cause, therefore? Is it from an immoveable or from a moveable cause? But if from a moveable cause, the human species will some time or other fail; since every thing which subsists from a moveable cause ranks among things which are naturally adapted to perish. We may also make the same inquiry respecting the sun and moon, and each of the stars: for, if these are produced from a moveable cause, in these also there will be a mutation of essence. But if these, and all such forms as eternally subsist in the universe, are from an immoveable cause, where does the immoveable cause of these subsist? For it is evidently not in bodies, since every natural body is naturally adapted to be moved. It therefore subsists proximately in nature. But nature is irrational; and it is requisite that causes properly so called should be intellectual and divine. Hence, the immoveable causes of these forms subsist primarily in intellect, secondarily in soul, in the third gradation in nature, and lastly in bodies. For all things either subsist apparently or unapparently, either separate or inseparable from bodies; and if separate, either immoveably according to essence and energy, or immoveably according to essence, but moveably according to energy. Those things, therefore, are properly immoveable, which are immutable both according to essence and energy, such as are intelligibles; but those possess the second rank which are immoveable indeed according to essence, but moveable according to energy, and such are souls: in the third place, things unapparent indeed, but inseparable from the phænomena, are such as belong to the empire of nature, and those rank in the last place which
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are apparent, subsist in sensibles, and are divisible: for the gradual subjection of forms proceeding as far as to sensibles ends in these.

In the sixth place, let us speculate after another manner concerning the subsistence of forms or ideas, beginning from demonstrations themselves. For Aristotle has proved in his *Last Analytics*, and all scientific men must confess, that demonstrations are entirely from things which have a priority of subsistence, and which are naturally more honorable. But if the things from which demonstrations consist are universals (for every demonstration is from these),—hence these must be causes to the things which are unfolded from them. When, therefore, the astronomer says, that the circles in the heavens bisect each other, since every greatest circle bisects its like, whether does he demonstrate or not? For he makes his conclusion from that which is universal. But where shall we find the causes of this section of circles in the heavens, which are more universal than the circles? For they will not be in bodies, since every thing which is in body is divisible. They must, therefore, reside in an incorporeal essence; and hence there must be forms which have a subsistence prior to apparent forms, and which are the causes of subsistence to these, in consequence of being more universal and more powerful. Science, therefore, compels us to admit that there are universal forms, which have a subsistence prior to particulars, are more essential and more causal, and from which the very being of particulars is derived.

By ascending from motion we may also after the same manner prove the existence of ideas. Every body from its own proper nature is alter-motive, or moved by another, and is indigent of motion externally derived. But the first, most proper and principal motion is in the power which moves the mundane wholes: for he possesses the motion of a mover, and body the motion of that which is moved, and corporeal motion is the image of that which pre-subsists in this power. For that is perfect motion because it is energy; but the motion in body is imperfect energy: and the imperfect derives its subsistence from the perfect.

From knowledge also we may perceive the necessity of the same conclusion. For last knowledge is that of bodies, whether it be denominated sensible or imaginable: for all such knowledge is destitute of truth, and does not contemplate any thing universal and common, but beholds all things invested with figure, and all things partial. But more perfect knowledge is that which is without figure, which is immaterial, and which subsists by itself, and from itself; the image of which is sense, since this is imperfect knowledge, subsisting in another, and not originating from itself. If, therefore, as in motion, so also in knowledge and in life, that which participates, that which is participated, and that which is imparticipable, are different from each other, there is also the same reasoning with respect to other forms. For matter is one thing, the form which it contains another, and still different from either is the separate form. For God and Nature do not make things imperfect which subsist in something different from themselves, and which have an obscure
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and debile existence, but have not produced things perfect, and which subsist from themselves; but by a much greater priority they have given subsistence to these, and from these have produced things which are participated by, and merged in, the darkness of matter.

But if it be requisite summarily to relate the cause that induced the Pythagoreans and Plato to adopt the hypothesis of ideas, we must say that all these visible natures, celestial and sublunary, are either from chance, or subsist from a cause. But that they should be from chance is impossible: for things more excellent will subsist in things subordinate, viz. intellect, reason, and cause, and that which proceeds from cause. To which we may add, as Aristotle observes, that prior to causes according to accident, it is requisite that there should be things which have an essential subsistence; for the accidental is that in which the progressions of these are terminated. So that a subsistence from cause will be more antient than a subsistence from chance, if the most divine of things apparent are the progeny of chance. But if there is a cause of all things, there will either be many unconjoined causes, or one cause; but if many, we shall not be able to assign to what it is owing that the world is one, since there will not be one cause according to which all things are co-ordinated. It will also be absurd to suppose that this cause is irrational. For, again, there will be something among things posterior better than the cause of all things, viz. that which being within the universe, and a part of the whole, operates according to reason and knowledge, and yet derives this prerogative from an irrational cause. But if this cause is rational and knows itself, it will certainly know itself to be the cause of all; or, being ignorant of this, it will be ignorant of its own nature. But if it knows that it is essentially the cause of the universe, it will also definitely know that of which it is the cause; for, that which definitely knows the one will also definitely know the other. Hence, he will know every thing which the universe contains, and of which he is the cause: and if this be the case, beholding himself and knowing himself, he knows things posterior to himself. By immaterial reasons, therefore, and forms, he knows the mundane reasons and forms from which the universe consists, and the universe is contained in him as in a cause separate from matter. This, Proclus adds, was the doctrine of the Eleatic Zeno, and the advocates for ideas: nor did these men alone, says he, form conceptions of this kind respecting ideas, but their doctrine was also conformable to that of the theologists. For Orpheus says, that after the absorption of Phanes in Jupiter, all things were generated: since prior to this the causes of all mundane natures subsisted unitedly in Phanes, but secondarily and with separation in the Demiurgus of the universe. For there the sun and the moon, heaven itself, and the elements, Love the source of union, and in short all things, were produced: for there was a natural conflux, says Orpheus, of all things in the belly of Jupiter. Nor did Orpheus stop here; but he also delivered the order of demiurgic forms through which sensible natures were allotted their present distribution. Proclus further
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ther adds: The gods also have thought fit to unfold to mankind the truth respecting ideas; and have declared what the one fountain is whence they proceed; where ideas first subsist in full perfection; and how in their progression they assimilate all things, both wholes and parts, to the Father of the universe. What Proclus here alludes to is the following Chaldaic Oracle:

Νους πατρος ερροιζησε νοεστας ακμαδι βουλη
 Παμμορφους ιδεας. πηγης δε μιας αποπτασαι
 Εξεθορον πατροθεν γαρ εην βουλητε τελος τε.
 Αλλ' εμερισθησαν νοερω πυρι μοιρηθειςαι
 Εις αλλας νοερας· κοσμω γαρ αναξ πολυμορφω
 Προυθηκεν νοερον τυπον αφθιτον ου κατα κοσμον
 Ιχνος επειγομενος μορφης μετα κοσμος εφανθη·
 Παντοπαις ιδεαις κεχαρισμενος, ων μια πηγη,
 Εξ ης ροιζονται μεμερισμεναι αλλαι απλητοι,
 Ρηγνυμεναι κοσμου περι σωμασιν, αι περι κολπους
 Σμερδαλεους, σμηνεσσιν εοικυιαι φορεονται,
 Τραπουσαι περι τ' αμφι παρα σχεδον αλλυδεις αλλη
 Εννοιαι νοεραι πηγης πατρικης απο, πολυ
 Δραττομεναι πυρος ανθος ακαιμητου χρονου, ακμη
 Αρχεγονους ιδεας πρωτη πατρος εβλυσε τας δε
 Αυτοτελης πηγη·

i. e. The intellect of the Father made a crashing noise, understanding with unwearied counsel omniform ideas. But with winged speed they leaped forth from one fountain: for both the counsel and the end were from the Father. In consequence, too, of being allotted an intellectual fire, they are divided into other intellectual forms: for the king previously placed in the multiform world an intellectual incorruptible impression, the vestige of which hastening through the world, causes it to appear invested with form, and replete with all-various ideas of which there is one fountain. From this fountain other immense distributed ideas rush with a crashing noise, bursting forth about the bodies of the world, and are borne along its terrible bosoms like swarms of bees. They turn themselves too on all sides, and nearly in all directions. They are intellectual conceptions from the paternal fountain, plucking abundantly the flower of the fire of sleepless time. But a self-perfect fountain pours forth primogenial ideas from the primary vigour of the Father.

Through these things, says Proclus, the gods have clearly shown where ideas subsist, who the divinity is that comprehends the one fountain of these, and that from this fountain a multitude proceeds. Likewise, how the world is fabricated according

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to ideas; that they are motive of all mundane systems; that they are essentially intellectual; and that they are all-various according to their characteristics.

If, therefore, he adds, arguments persuade us to admit the hypothesis respecting ideas, and the wise unite in the same design, viz. Plato, Pythagoras, and Orpheus, and the gods clearly bear witness to these, we should but little regard sophistical arguments, which are confuted by themselves, and assert nothing scientific, nothing sane. For the gods have manifestly declared that they are conceptions of the Father: for they abide in his intelligence. They have likewise asserted that they proceed to the fabrication of the world; for the crashing noise signifies their progression;—that they are omniform, as comprehending the causes of all divisible natures; that from formal ideas others proceed, which are allotted the fabrication of the world, according to its parts, and which are said to be similar to swarms of bees; and lastly, that they are generative of secondary natures.

For the sake of the Platonic reader it may not be improper to observe that, in the Supplement to Vol. III. of the Monthly Magazine, I have given as complete a collection of these Chaldaic Oracles, as I believe can at present be obtained. Of these invaluable remains of a theology coeval with the universe, I have not only ascertained the authenticity, but have made an accurate arrangement, and have given the authors and places where each (a few only excepted) may be found. The reader will likewise find that I have added fifty Chaldaean Oracles and fragments of Oracles to the collection of Patricius, and that I have given a far more correct edition of the text than that of Stanley and Le Clerc, who, from not understanding any thing of the wisdom with which these venerable fragments are replete, have by their arrangement made perfect nonsense of the greater part.

Should the reader, convinced by these arguments that there is an ideal world subsisting in incorporeal perfection, all-beautiful and all-divine, be fortunately led to inquire how he may arrive thither, and by what guides like leading stars he may direct his flight from the magic power of Circe* and the detaining charms of Calypso†, to this splendid region, the paternal port, the true Ithaca of the soul, let him attend to the following admirable passage from the Ninth Book of the Fifth Ennead of Plotinus, On Intellect, Ideas, and Being. For if, like Ulysses, he is able even in the present life to pass from sense to the regions of intellect, he may like him, after having wandered over the sea of generation, been purified by the cathartic virtues, and experienced the light of science, find intellectual energy, and intellect itself shining in the recesses of his soul,

“ Since all men from their birth employ sense prior to intellect, and are necessarily first conversant with sensibles, some proceeding no further pass through life, con-

* The goddess of Sense,

† The goddess of Phantasy,

sidering

considering these as the first and last of things, and apprehending that whatever is painful among these is evil, and whatever is pleasant is good; thus thinking it sufficient to pursue the one and avoid the other. Those, too, among them who pretend to a greater share of reason than others, esteem this to be wisdom, being affected in a manner similar to more heavy birds, who, collecting many things from the earth, and oppressed with the weight, are unable to fly on high, though they have received wings for this purpose from nature. But others are in a small degree elevated from things subordinate, the more excellent part of the soul recalling them from pleasure to a more worthy pursuit. As they are, however, unable to look on high, and as not possessing any thing else which can afford them rest, they betake themselves together with the name of virtue to actions and the election of things inferior, from which they at first endeavoured to raise themselves, though in vain. In the third class is the race of divine men, who through a more excellent power, and with piercing eyes, acutely perceive supernal light, to the vision of which they raise themselves above the clouds and darkness as it were of this lower world, and there abiding despise every thing in these regions of sense; being no otherwise delighted with the place which is true and properly their own, than he who after many wanderings is at length restored to his lawful country.

“What, then, is this region? and how may we arrive thither? This, indeed, may be accomplished by him who is naturally a lover, and is truly from his birth a philosopher: as a lover being parturient about the beautiful, yet not enduring to be detained by the beauty in body, he flies from thence to the beauty of soul, viz. virtues and sciences, institutions and laws; and again from these ascends to the cause of all that is beautiful in soul: and if any thing remains prior to this, he still ascends, till at length he arrives at that which is first, and which is beautiful from itself. Arriving hither he is freed from parturition, but not before. But how does he ascend? Whence does he derive the power? And after what manner does this love conduct him to the desired end? Shall we say it is thus?

“This beauty which is inherent in bodies is adventitious to bodies: for the forms of bodies reside in them as in matter. The subject, therefore, is changed, and from being beautiful becomes base. Hence, reason says that body is beautiful by participation. What, then, is it which makes body to be beautiful? This is effected in one way by the presence of beauty, and in another by soul, which fashions and inserts a form of this kind. Is, then, soul beautiful from itself, or not? Certainly not: for, if this were the case, one soul would not be wise and beautiful, and another unwise and base. The beauty about soul, therefore, proceeds from wisdom. What is it then which imparts wisdom to soul? Is it not necessarily intellect; an intellect which is not at one time intellect, and at another deprived of intelligence, but true intellect, and which is, therefore, beautiful from itself? Is it then necessary to

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stop here, as at that which is first? Or ought we not also to proceed beyond intellect itself? Intellect, indeed, in our ascent presents itself to the view prior to the principle of things, announcing as it were in the vestibule of *the good* that it contains all things in itself, being as it were an impression of *the good*, rather subsisting in multitude than unity, *the good* on the contrary entirely abiding in *one*."

With this we may also conjoin the following sublime passages from Plotinus on the Ideal World: they are extracted from his book On Intelligible Beauty, of which I have given a translation in my History of the Restoration of the Platonic Theology, at the end of Proclus on Euclid. I would earnestly recommend the whole of this admirable book to the attention of the reader.

"Divine natures are not at one time wise, and at another time the contrary; but they are perpetually wise, with a tranquil, stable, and pure intellect understanding all things, and knowing not properly human concerns, but their own, that is, such as are divine, and such as intellect itself perceives. But the gods who inhabit this visible heaven, for they abound in divine leisure, assiduously contemplate, as if it were above them, what the primary and intelligible heaven contains. But those who are stationed in this higher world contemplate its inhabitants possessing the whole of this diviner heaven. For all things there are heaven. There the sea, animals, plants, and men are heaven. Lastly, every portion of this heaven is celestial: the gods likewise who reside there do not disdain men, nor any other of its inhabitants, because every thing there is divine; and they comprehend the whole of this intelligible region with the most perfect repose.

"Hence the life of these divinities is easy, and truth is their generator and nurse, their essence and nutriment. Hence, too, they perceive all things, not such, indeed, as are subject to generation, but such as abide in essence. They likewise perceive themselves in others: for all things there are perfectly perspicuous. Nothing there is dark, nothing opposing; but every thing is conspicuous to all, intrinsically and universally. For light every where meets with light. Each thing contains in itself all, and all things are again beheld in another: so that all things are every where, and all is truly all. There every thing is all; there an *immense* splendor shines; there every thing is great, since even what is small is there great. There the sun is all the stars; and every star is a sun, and at the same time all the stars. But one thing excels in each, while in the mean time all things are beheld in each. There motion is perfectly pure: for in its progression it is not confounded by a mover foreign from the motion. Permanency also there is disturbed by no mutation: for it is not mingled with an unstable nature. Besides, beauty there is beauty itself, because it does not subsist in beauty: but every thing abides there, not as if placed in some foreign land; for the being of each is its own stable foundation. Nor is its essence different from its seat: for its subject is intellect, and itself is intellect. Just as if any one should conceive this sensible heaven, which is manifest and lucid

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to the eyes, germinating into stars by its light. In corporeal natures, indeed, one part is not every where produced from another, but each part is distinct from the rest. But there each thing is every where produced from the whole; and is at the same time particular and the whole. It appears, indeed, as a part; but by him who acutely perceives, it will be beheld as a whole: by him, I mean, who is endued with a sight similar to that of the lynx, the rays of whose eyes are reported to penetrate the depths of the earth. For it appears to me that this fable occultly signifies the perspicacity of supernal eyes. Besides, the vision of these blessed inhabitants is never wearied, and never ceases through a satiety of perceiving. For there is no vacuity in any perceiver, which when afterwards filled up can bring intuition to an end: nor can pleasure ever fail through the variety of objects, or through any discord between the perceiver and the thing perceived. Besides, every thing there is endued with an untamed and unwearied power. And that which can never be filled is so called, because its plenitude never spurns at its replenishing object: for, by intuition it more assiduously perceives; and beholding itself infinite, and the objects of its perception, it follows its own nature as its guide in unwearied contemplation. Again: no life there is laborious, since it is pure life: for, why should that labour which lives in the best manner? But the life there is wisdom, a wisdom not obtained by arguments like ours, because it is always total, nor is in any part deficient, from which it might require investigation. But it is the first wisdom, not depending on any other, yet not in such a manner that essence is first, and then wisdom succeeds as secondary and adjunct. Hence no wisdom is greater than this, but there science itself is the associate of intellect, because they both germinate and beam with divine splendors together: in the same manner as by a certain imitation they report that Justice resides with Jupiter: for every thing of this kind exists there like a lucid resemblance perspicuous from itself, so as to become the spectacle of transcendently happy spectators."

Again: in another part of the same admirable work we have the following truly sublime passage:

"Let us then receive by our dianoëtic power this our sensible world, so disposed that every part may remain indeed what it is, but that one thing may mutually reside in another. Let us suppose that all things are collected as much as possible into one, so that each particular object may first present itself to the eyes; as if a sphere should be the exterior boundary, the spectacle of the sun immediately succeeding, and a representation of the other stars, and the earth, the sea, and all animals appearing within, as in a diaphanous globe: and lastly, let us conceive that it is possible to behold all things in each. Let there be then in the soul a lucid imagination of a sphere, containing all things in its transparent receptacle; whether they are agitated or at rest, or partly mutable and partly stable. Now, preserving this sphere,

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receive another in your soul, removing from this last the extension into bulk, take away likewise place, and banish far from yourself all imagination of matter; at the same time being careful not to conceive this second sphere as something less than the first in bulk, for this must be void of all dimension. After this invoke that Divinity who is the Author of the universe imaged in your phantasy, and earnestly entreat him to approach. Then will he suddenly come, bearing with him his own divine world, with all the gods it contains; then will he come, being at the same time one and all, and bringing with him all things concurring in one. There, indeed, all the gods are various amongst themselves in gradations of power, yet by that one abundant power they are all but one, or rather one is all: for the divinity never fails by which they are all produced. But all the gods abide together, and each is again separate from the other in a certain state unattended with distance, and bearing no form subject to sensible inspection; or one would be situated differently from the other, nor each be in itself all. Nor, again, does any one of these possess parts different from others, and from itself; nor is every whole there a divided power, and of a magnitude equal to its measured parts; but it is indeed an universe, and a universal power proceeding to infinity in a power which is the parent of energy."

Page 328. *And to say that ideas are paradigms, &c.*

Every idea is not only the paradigm, but likewise the producing cause, of sensibles: for something else would be requisite by which sensibles are generated and assimilated to ideas, if these divine forms remained sluggish and immoveable, and without any efficacious power, similar to impressions in wax: for it is absurd to admit that the reasons in nature possess a certain fabricative energy, but that intelligible forms should be deprived of productive power. Every divine form, therefore, is not only paradigmatic but paternal; and is by its very essence the generative cause of the many. It likewise possesses a perfective power: for it is this which leads sensibles from the imperfect to the perfect, and excites matter which is all things in capacity, into a subsistence according to energy. It also possesses a guardian power. For whence does the orderly arrangement of the universe remain indissoluble, if not from ideas? Whence those stable reasons which preserve the sympathy of wholes infrangible, and through which the world remains always perfect, without the failure of any form,—whence are they derived except from stable causes? Just as the mutability of sensibles proceeds from moveable causes. Add too, that the divisible and dissipated nature of bodies is no otherwise compressed and connected than by the indivisible power of forms: for body is of itself divisible, and requires the connective power of divine reasons. But, if union precedes this connection, for it is necessary that every thing connective should be previously one and

and indivisible,—this being the case, form or idea will not only be generative, defensive, and perfective, but also connective and unific of all secondary natures.

Page 345, Note *.

For the sake of the reader who is desirous and at the same time capable of ascending to a scientific knowledge of the ineffable principle of things, the following propositions relative to *the good* and *the one* are added. They are extracted from that most admirable work, The Elements of Theology, by Proclus, my translation of which, at the end of my Proclus on Euclid, I would earnestly recommend to the English reader; and, if he possesses a truly philosophical genius, would also urge him to

“ Read it by day, and meditate by night.”

“ The principle and first cause of all beings is *the good*.

“ For if all things proceed from one cause, it is requisite to call that cause, either *the good*, or more excellent than *the good*. But if it be more excellent than *the good*, we ask whether any thing emanates from this cause into beings, and into the nature of beings, or nothing? And indeed if nothing, it will be absurd: for we cannot on this hypothesis any longer preserve it in the order of a cause, since it is every where requisite that something should be present from the cause to the things caused, and especially from the first cause, from which all things depend, and through which every being subsists. But if there is a participation of this first cause in beings, in the same manner as there is of *the good*, there will be something more excellent than goodness penetrating into beings from the first cause: for, since it is more excellent and superior to *the good*, it cannot bestow on secondary natures any thing worse than the benefits distributed by that which is posterior to itself. But what can be more excellent than goodness itself? since we apply the term *more excellent* to that which participates more of *the good*. If, then, that which is non-good is not more excellent, it must be posterior to *the good*. But if likewise all beings desire good, how can any thing be prior to this cause? For, if good also desires, how can it be good in the most eminent degree? But if it does not desire, must not all beings desire that cause of all from which they proceed? And if it is the good itself from which all beings depend, *the good* must be the principle and first cause of all.

“ 2. Every good is endued with a power of uniting its participants, and every union is good; and *the good itself* is the same with *the one*.

“ For if *the good itself* is the preserver of all beings, and on this account is desirable by all, but *the one itself* preserves and contains the essence of each: (for all things are preserved by *the one*, and dispersion removes every thing from essence) hence, *the good* causes those things to be one, to which it is present, and contains them by union.

union. But, if *the one* is endued with a congregating and containing power, it perfects every being by its presence: and hence, it is good to all things to be united. But, if union is essentially good, and good possesses an uniting power, the *simply good* and the *simply one* are the same; uniting, and at the same time benefiting beings. Hence it is, that things, which in a certain respect fall from good, are also deprived of the participation of unity; and that things which are destitute of *the one*, because they are replete with separation, are also deprived of good.

"Hence, both goodness is union, and union is goodness; and *the good* is *the one*, and *the one* is the first good.

"3. *The one* is superessential.

"For *essence* is not the same with *unity*; nor is *to be*, and *to be united*, one and the same. But, if *essence* is not the same with *unity*, that which is first will either be both these, and so will not be *one* alone, but something besides one, and will participate of *the one* without being *the one itself*; or it will be either of these. But, indeed, if it is *essence* it will be indigent of *the one*. But it is impossible that *the good* and *the first* should be indigent. It will therefore, be *the one* alone; and will consequently be superessential."

These dogmas, that *the one* is the principle of all things, and that *the one* is the same with the good, and is superessential, are perfectly conformable to the doctrine of Plato: for that philosopher, in the sixth book of his Republic, observes, "You may say, therefore, that *the good* not only affords to objects of knowledge the power of being known, but likewise distributes their being and essence, while, in the mean time, *the good itself* is not *essence*, but above *essence*, transcending it both in dignity and power." And, in the first hypothesis of his Parmenides, he asserts, in one of his conclusions respecting *the one*, "that *the one* in no respect participates of essence." (See p. 326 of my Translation of that dialogue)

This doctrine concerning the ineffable principle of things, which is unequalled for its sublimity and profundity, inspired that divine magnificence of conception which is so conspicuous in the following passages. Proclus, then, in his second book On the Theology of Plato, thus commences his contemplation of *the one* through negations. "Let us now, if ever, remove from ourselves multiform knowledge, exterminate all the variety of life, and in perfect quiet approach near to the cause of all things. For this purpose, let not only opinion and phantasy be at rest, nor the passions alone which impede our anagogic impulse to *the first*, be at peace; but let the air be still, and the universe itself be still. And let all things extend us with a tranquil power to communion with the ineffable. Let us also, standing there, having transcended the intelligible (if we contain any thing of this kind), and with nearly closed eyes adoring as it were the rising sun, since it is not lawful for any being whatever intently to behold him—let us survey the sun whence the light of
the

the intelligible gods proceeds, emerging, as the poets say, from the bosom of the ocean; and, again, from this divine tranquillity descending into intellect, and from intellect employing the reasonings of the soul, let us relate to ourselves what the natures are, from which, in this progression, we shall consider the first god as exempt. And let us as it were celebrate him, not as establishing the earth and the heavens, nor as giving subsistence to souls, and the generations of all animals; for he produced these indeed, but among the last of things. But, prior to these, let us celebrate him, as unfolding into light the whole intelligible and intellectual genus of gods, together with all the supermundane and mundane divinities—as the god of all gods, the unity of all unities, and beyond the first adyta,—as more ineffable than all silence, and more unknown than all essence,—as holy among the holies, and concealed in the intelligible gods*.”

Damascius, likewise, in his MS. Treatise, *περί αρχῶν*, or Concerning Principles, observes, “This highest god is seen afar off as it were obscurely; and, if you approach nearer, he is beheld still more obscurely; and lastly, he takes away the ability of perceiving other objects. He is, therefore, truly an incomprehensible and inaccessible light, and is profoundly compared, by Plato, to the sun: upon which the more attentively you look, the more you will be darkened and blinded; and will only bring back with you eyes stupefied with excess of light.”

Further still: the Pythagoræans, and Plato the best of the Pythagoræans, called the principle of all things *the one*, because, to be united is to all things good, and the greatest of goods; but that which is entirely separated from unity is evil, and subsists at the extremity of evils: for division is the cause of dissimilitude, and privation of sympathy. Hence also, says Proclus, every principle, so far as it is allotted this dignity, is a certain unity, and that which is most single in every order of things.

* Ἄγε δὴ οὖν, εἰπερ ποτε, καὶ νῦν τὰς πολυειδείς ἀποσπενδαυμένους γυνώσκεις, καὶ παντὸς τοιοῦτον τῆς ζωῆς ἐξορισμένον ἀφ’ ἡμῶν, καὶ πάντων ἐν πρῆμα γεγονότων, τῇ πάντων αἰτίᾳ προστιμῶμεν ἑγγύς. ἔστω δὲ ἡμῖν μὴ μόνον δοξῆς, μὴ φαντασίας πρῆμα, μὴ δὲ ἡσυχία τῶν παθῶν ἡμῶν ἐμποδίζοντων τὴν πρὸς τὸ πρῶτον ἀναγωγὴν ὁρμῆν, ἀλλ’ ἡσυχὸς μὲν ἀπὸ, ἡσυχὸν δὲ τὸ παντὸς τοῦτο. πάντα δὲ ἀτρεμῇ τῇ δυνάμει πρὸς τὴν τοῦ ἀρρητοῦ μετουσίαν ἡμᾶς ἀνατείνεται. καὶ στάντες ἐκεῖ, καὶ τὸ νοητὸν (εἰ δὴ τί τοιοῦτον ἐστὶν ἐν ἡμῖν) ὑπερδραμοντες, καὶ οἷον ἡλίου ἀνίσχοντα προσκυνήσαντες, μεμνημένοι τοῖς ὀφθαλμοῖς (οὐ γὰρ θεμὶς ἀντῶκειν οὐδὲ ἄλλο τῶν οὐτῶν οὐδὲν) τοῦ τοῖνον τοῦ φωτός τῶν νοητῶν θεῶν ἡλίου ἐξ ὠκεανοῦ, φασὶν οἱ ποιηταί, πρῶφαινομενὸν ἰδόντες, καὶ αὐθὶς ἐκ τῆς ἐνθεοῦ ταύτης γαλήνης εἰς νοῦν καταβάντες, καὶ ἀπονοῦ τοῖς τῆς ψυχῆς χρωμένοι λογισμοῖς, εἰπόμεν πρὸς ἡμᾶς αὐτούς, ὡς ἐξηρημένον ἐν τῇ πορείᾳ ταύτῃ τὸν πρῶτον θεόν τεθειμένον. καὶ οἷον ὑμνησωμεν αὐτὸν οὐχ ὅτι γῆν, καὶ οὐρανὸν ὑπεστήτην λεγόντες, οὐδ’ αὐτὴν ψυχᾶς, καὶ ζῶν ἀπάντων γενέσεις, καὶ ταῦτα μὲν γὰρ, ἀλλ’ ἐπ’ ἐσχατοῖς. πρὸ δὲ τούτων, ὡς παν μὲν τὸ νοητὸν τῶν θεῶν γενος, παν δὲ τὸ νοερόν ἐξεφθνε, πάντας δὲ τοὺς ὑπὲρ τὸν κόσμον, καὶ τοὺς ἐν τῷ κόσμῳ θεοὺς ἀπάντας, καὶ ὡς θεὸς ἐστὶ θεῶν ἀπάντων, καὶ ὡς εἷς ἐαδὼν, καὶ ὡς τῶν ἀδύτων (lege ἀδύτων) ἐπεκεῖνα τῶν πρώτων, καὶ ὡς πάσης σίγης ἀρρητοτερόν, καὶ ὡς πάσης ὑπαρξέως ἀγνωστοτερόν, ἅγιος ἐν ἁγίοις, τοῖς νοητοῖς ἐναποκεκρυμμένος θεός. Procl. in Plat. Theol. p. 109.

is first, not considered as subsisting in parts, but in wholes, nor in some one of the many, but in the monads connective of multitude.

But, as this is a subject of all others the most interesting, the following admirable passage from the sixth book of the MS. Commentary of Proclus on the Parmenides is added for the sake of those, who, being born with a divine destiny (*θεῖα μοῖρα*), are capable of arriving at the summit of philosophy.

"The first cause therefore, as supplying all things with the greatest good, unites all things, and is on this account called *the one*. Hence the gods, from their surpassing similitude to the first god, will be unities proceeding from this one principle, and yet ineffably absorbed in his nature. Thus, for instance, (that we may illustrate this doctrine by an example,) we perceive many causes of light, some of which are celestial, and others sublunary; for light proceeds to our terrestrial abode from material fire, from the moon, and from the other stars, and this, so as to be different according to the difference of its cause. But if we explore the one monad of all mundane light, from which other lucid natures and sources of light derive their subsistence, we shall find that it is no other than the apparent orb of the sun; for this orbicular body proceeds, as it is said, from an occult and supermundane order, and disseminates in all mundane natures a light commensurate with each.

"Shall we say then that this apparent body is the principle of light? But this is endowed with interval, and is divisible, and light proceeds from the different parts which it contains; but we are at present investigating the one principle of light. Shall we say, therefore, that the ruling soul of this body generates mundane light? This indeed, produces light, but not primarily, for it is itself multitude: and light contains a representation of a simple and uniform subsistence. May not intellect, therefore, which is the cause of soul, be the fountain of this light? Intellect, indeed, is more united than soul, but is not that which is properly and primarily the principle of light. It remains, therefore, that *the one* of this intellect, its summit, and as it were flower, must be the principle of mundane light: for this is properly the sun which reigns over the visible place, and, according to Plato in the Republic, is the offspring of *the good*; since every unity proceeds from thence, and every deity is the progeny of the unity of unities, and the fountain of the gods. And as *the good* is the principle of light to intelligibles, in like manner the unity of the solar order is the principle of light to all visible natures, and is analogous to *the good*, in which it is occultly established, and from which it never departs.

"But this unity having an order prior to the solar intellect, there is also in intellect, so far as intellect, an unity participated from this unity, which is emitted into it like a seed, and through which intellect is united with the unity or deity of the sun. This, too, is the case with the soul of the sun; for this through *the one* which she contains, is elevated through *the one* of intellect as a medium, to the deity of the sun.

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In like manner with respect to the body of the sun, there is in this a certain echo, as it were, of the primary solar *one* : for it is necessary that the solar body should participate of things superior to itself ; of soul according to the life which is diffeminated in it ; of intellect according to its form ; and of unity according to its *one*, since soul participates both of intellect and this *one*, and participations are different from the things which are participated. You may say, therefore, that the proximate cause of the solar light is this *unity* of the solar orb.

In like manner, if we should investigate the root, as it were, of all bodies, from which celestial and sublunary bodies, wholes and parts, blossom into existence, we may not improperly say that this is *nature*, which is the principle of motion and rest to all bodies, and which is established in them, whether they are in motion or at rest. But I mean by *Nature*, the one life of the world, which, being subordinate to intellect and soul, participates through these of generation. And this indeed is more a principle than many and partial natures, but is not that which is properly the principle of bodies : for this contains a multitude of powers, and, through such as are different, governs different parts of the universe : but we are now investigating the one and common principle of all bodies, and not many and distributed principles. If, therefore, we wish to discover this *one* principle, we must raise ourselves to that which is most united in *nature*, to its flower, and that through which it is a deity, by which it is suspended from its proper fountain, connects, unites, and causes the universe to have a sympathetic consent with itself. This *one*, therefore, is the principle of all generation, and is that which reigns over the many powers of *nature*, over partial natures, and universally over every thing subject to the dominion of nature.

In the third place, if we investigate the principle of knowledge, we shall find that it is neither phantasy nor sense ; for nothing impartible, immaterial, and unfigured is known by these. But, neither must we say that either doxastic * or dianoëtic knowledge is the principle of knowledge ; for the former does not know the causes of things, and the latter, though it knows causes, yet apprehends the objects of its perception partially, and does not view the whole at once, nor possess an energy collective and simple, and which eternally subsists according to the same. Nor yet is intellect the principle of knowledge : for all the knowledge which it contains subsists, indeed, at once, and is intransitive and impartible. But, if the knowledge of intellect was entirely without multiplication, and profoundly one, perhaps we might admit that it is the principle of knowledge. Since, however, it is not only one but various, and contains a multitude of intellections ; for, as the objects of intellect are separated from each other, so also intellectual conceptions,—this being the case, intellect

* Viz. Consisting from opinion.

is not the principle of knowledge, but this must be ascribed to *the one* of intellect, which is generative of all the knowledge it contains, and of all that is beheld in the secondary orders of beings. For this, being exempt from the many, is the principle of knowledge to them, not being of such a nature as the *sameness* of intellects; since this is co-ordinate to *difference*, and is subordinate to essence. But *the one* transcends, and is connective of an intellectual essence. Through this *one* intellect is a god, but not through sameness, nor through essence: for, in short, intellect, so far as intellect, is not a god; for otherwise a partial intellect would be a god. And the peculiarity of intellect is to understand and contemplate beings, and to judge; but of a god to confer unity, to generate, to energise providentially, and every thing of this kind. Intellect, therefore, by that part of itself which is not intellect is a god, and by that part of itself which is not a god it is a divine intellect. And this unity of intellect knows itself, indeed, so far as it is intellectual, but becomes intoxicated as it is said with nectar, and generates the whole of knowledge, so far as it is the flower of intellect, and a supersubstantial one. Again, therefore, investigating the principle of knowledge, we have ascended to *the one*; and not in these only, but in every thing else in a similar manner, we shall find monads the leaders of their proper numbers, but the unities of monads subsisting as the most proper principles of things." And shortly after, the same incomparable man further observes, "All these unities subsist in and are profoundly united with each other; and their union is far greater than the communion and sameness which subsist in beings. For in these there is indeed a mutual mixture of forms, similitude, and friendship, and a participation of each other; but the union of the gods, as being an union of unities, is much more uniform, ineffable, and transcendent: for here *all are in all*, which does not take place in forms or ideas*; and their unmingled purity and the characteristic of each, in a manner far surpassing the diversity in ideas, preserve their natures unconfused, and distinguish their peculiar powers. Hence, some of them are more universal, and others more partial; some of them are characterised according to permanency, others according to progression, and others according to conversion. Some, again, are generative, others anagogic, and others demiurgic; and, in short, there are different characteristics of different gods, viz. the connective, perfective, demiurgic, assimilative, and such others as are celebrated posterior to these; so that all are in all, and yet each is at the same time separate and distinct.

Indeed, we obtain this knowledge of their union and characteristics from the natures by which they are participated: for, with respect to the apparent gods, we say that there is one soul of the sun, and another of the earth, directing our atten-

* For in these all are in each, but not all in all.

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tion to the apparent bodies of these divinities, which possess much variety in their essence, powers, and dignity among wholes. As, therefore, we apprehend the difference of incorporeal essences from sensible inspection, in like manner, from the variety of incorporeal essences we are enabled to know something of the unmingled separation of the first and superessential unities, and of the characteristics of each; for each unity has a multitude suspended from its nature, which is either intelligible alone, or, at the same time, intelligible and intellectual, or intellectual alone; and this last is either participated or not participated, and this again is either supermundane or mundane: and thus far does the progression of the unities extend." And shortly after he adds, "As trees by their extremities are rooted in the earth, and through this are earthly in every part, in the same manner divine natures are rooted by their summits in *the one*, and each is an *unity* and *one* through its unconfused union with *the one itself*."

He who can read these passages, and afterwards pity the ignorance of the heathens in theological concerns, is himself an object of extreme pity; having the *greatest eye* of his soul blinded by Ignorance, and buried in the darkness of Oblivion.

A DISSERTATION
ON
NULLITIES AND DIVERGING SERIES;

IN WHICH

The Nature of infinitely small Quantities is unfolded ; and the TO 'EN, or
The One, of the Pythagoræans and Platonists elucidated.

BY THOMAS TAYLOR.

A DISSERTATION, &c.

CHAP. I.

THE doctrine of nullities has been hitherto involved in impenetrable obscurity; and while some eminent mathematicians have considered them to be, as their name implies, *notbings*, others have admitted that a nullity never signifies nothing absolutely, but in relation to the object under consideration. Both, however, have been very far from suspecting that they are in reality infinitely small quantities, and that they have a subsistence prior to number, and even to the monad itself. To prove this, is in part the design of the following pages; in which, also, I persuade myself the reader will find the nature of infinitely small quantities clearly unfolded, and the source of a new, and by no means unprofitable stream of mathematical science detected.

1. It is well known that infinite series are distributed by mathematicians into three classes, the converging, the diverging, and the neutral. Thus, $1 - \frac{1}{2} + \frac{1}{4} - \frac{1}{8} + \frac{1}{16}$, &c, is called a converging; $1 - 2 + 3 - 4 + 5$, &c, a diverging; and $1 - 1 + 1 - 1$, &c, a neutral, series. The diverging series is so called, because its terms continually decrease; and the neutral, because its terms neither increase nor diminish. We propose to show that mathematicians have been egregiously mistaken in the conclusions they have formed respecting those series which they call diverging and neutral.

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2. The fraction $\frac{1}{2} = \frac{1}{1+1}$, is when resolved into an infinite series, as is well known, $1 - 1 + 1 - 1$, &c, ad infin. "In this series, says Wolfius, (see his Algebra, p. 83) the quotient, though never so much continued, differs from the proposed fraction by $\frac{1}{2}$;" "whence, he adds, appears the cause of the error which Guido Grando committed in his Treatise of the quadrature of the circle and hyperbola, where he infers that, because $1 - 1 + 1 - 1$, &c, $= 0$, the sum of the infinite nullities is $\frac{1}{2}$; which error Leibnitz knew in his Acta Eruditorum, tom. 5. sup. p. 264, & seq." The reasoning of Euler on this series, which he calls "a remarkable comparison," is as follows, (Elements of Algebra, p. 145,) "If we stop, (says he) at -1 , the series gives 0; and, if we finish by $+1$, it gives 1. But this is precisely what solves the difficulty; for, since we must go on to infinity, without stopping either at -1 , or at $+1$, it is evident that the sum can neither be 0 nor 1, but that this result must be between these two, and therefore be $= \frac{1}{2}$." Whence it appears that Euler, as well as Wolfius, was very far from suspecting that the sum of the infinite nullities is $\frac{1}{2}$; and, as Euler is one of the latest writers on Algebra, I infer that the conclusions of these two great mathematicians respecting this series are generally adopted; particularly as I find, in that excellent work, Dr. Hutton's Mathematical Dictionary, that this series is ranked among those of the neutral order.

3. It is singular that neither Euler, nor any other mathematician, should have considered that $\frac{1}{3} = \frac{1}{1+1+1}$, $\frac{1}{4} = \frac{1}{1+1+1+1}$; and, in short, all fractions whose numerators are unity, and whose denominators are distributed into unities, will, when resolved into infinite series, be equal to $1 - 1 + 1 - 1$, &c, infinitely; and consequently, the reasoning of Euler no less applies to all fractions whatever of this kind, than to $\frac{1}{2}$, and is no solution of the difficulty. But the fraction $\frac{1}{2}$ seems to have been like the pillars of Hercules on this dark ocean of inquiry; for modern mathematicians have not ventured to explore beyond it, as the reader will perceive in the course of this Dissertation. Had they made the attempt, fair, and ample, and novel regions of science would have presented themselves to their view.

4. But, however singular this circumstance may be, and singular it certainly is,
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there is another which greatly surpasses it in this respect, viz. that not even the most enterprising of our modern mathematicians should have ever tried the result of multiplying the infinite series $1 - 1 + 1 - 1, \&c$, collectively, by $1 + 1$ as below.

$$\begin{array}{r}
 1 - 1 + 1 - 1 + 1 - 1, \&c \\
 1 + 1 \\
 \hline
 1 - 1 + 1 - 1 + 1 - 1 \\
 + 1 - 1 + 1 - 1 + 1 - 1 \\
 \hline
 1 \dots \dots \dots
 \end{array}$$

For, since $\frac{1}{1+1} = 1 - 1 + 1 - 1, \&c$, ad infin., it is evident that, if the quotient is true, $1 - 1 + 1 - 1, \&c$, multiplied by $1 + 1$ ought to be equal to 1; and, that it is so when multiplied as above is obvious: for since, in any finite series of terms, the product is accurate to as many terms as are contained in the multiplicand, and it cannot be expected to be accurate beyond this number, if the multiplication is infinitely continued, the product will be accurately 1, which is the true product. But, mathematicians ~~not attending~~ to this, but considering $1 - 1$ as equivalent to 0, have concluded that, as 0 multiplied by $1 + 1$ is equal to 0, the sum of $1 - 1 + 1 - 1, \&c$, was not equivalent to the fraction $\frac{1}{2}$. It is indubitable, however, that it is so, and consequently $1 - 1$ is not the same with 0; or, in other words, $1 - 1$ considered collectively, or as one thing, is not the same with 1 considered as taken from one, so as to leave nothing.

5. This may be also further proved as follows: The $\frac{1}{2}$ of the infinite series $1 + 1 + 1 + 1, \&c$, produced by the expansion of $\frac{1}{1-1}$, is equal to $1 * + 1 * + 1 *$, &c ad infin. $= \frac{1}{1+1} \times \frac{1+1+1+1, \&c}{1}$. But $\frac{1}{1+1} \times \frac{1}{1-1} = \frac{1}{1*-1} = 1 * + 1 * + 1 *, \&c$; and consequently $\frac{1}{1-1} = 1 + 1 + 1, \&c$.

Again: $\frac{1}{1-1} \times \frac{1-1+1-1+1-1, \&c}{1} = 1 * + 1 * + 1 *, \&c$, and consequently $1 - 1 + 1 - 1, \&c$, $= \frac{1}{1+1}$. That is to say, the series $1 - 1 + 1 - 1, \&c$, taken collectively is equal to $\frac{1}{2}$, and therefore $1 - 1$ is not the same with 0.

In short, since $\frac{1}{1-1} \times \frac{1}{1} = 1 + 1 + 1, \&c$ ad infin., half that series $= \frac{1}{1-1}$
 $\times \frac{1}{2} = \frac{1}{2} + \frac{1}{2} + \frac{1}{2}, \&c$ ad infin., or $= 1 * + 1 * + 1 *, \&c$ ad infin.: but
 $\frac{1}{1-1} \times \frac{1-1+1-1+1-1}{1}, \&c$ ad infin. $= 1 * + 1 * + 1 *, \&c$; and conse-
 quently $1 - 1 + 1 - 1, \&c$, is not to be considered as a series of $0 + 0, \&c$ ad
 infin., but as a series the aggregate of which is equal to $\frac{1}{2}$.

6. Since, therefore, $\frac{1}{1+1} =$ the sum of $1 - 1 + 1 - 1$ ad infinitum, let us
 consider what will be the consequence when $\frac{1}{1+1+1} = \frac{1}{3}, \frac{1}{1+1+1+1} = \frac{1}{4},$
 and similar fractions are resolved into infinite series. It is evident indeed, that the
 quotients will be nullities, but that there should be the same number of nullities in
 each is impossible. With respect to $\frac{1}{3}$, then, when resolved it will be as follows:

$$\begin{array}{r}
 1 + 1 + 1 \quad 1 \quad (1 - 1 * + 1 - 1 * \\
 1 + 1 + 1 \\
 \hline
 - 1 - 1 \\
 - 1 - 1 - 1 \\
 \hline
 \cdot \quad \cdot + 1 \\
 \\
 1 + 1 + 1 \\
 \hline
 - 1 - 1 \\
 - 1 - 1 - 1 \\
 \hline
 \cdot \quad \cdot + 1
 \end{array}$$

7. Hence it appears that $\frac{1}{3}$ is equal to an infinite series of nullities with an inter-
 val between each, which intervals are denoted by the stars, so that the number of
 nullities in $\frac{1}{3}$ is less than the number in $\frac{1}{2}$ by the aggregate of the stars. In like
 manner it will be found that $\frac{1}{4}$ is equal to $1 - 1 ** + 1 - 1 **, \&c$. So that
 in $\frac{1}{4}$ there will be two intervals between each nullity; and universally the number of
 intervals between two terms of any series, will be found to be equal to the deno-
 minator

[illegible]
$$\begin{array}{r} 1 - 1 + 1 - 1 + 1 - 1, \&c., = \frac{1}{2} \\ 1 + 1 + 1 + 1 + 1 + 1 \\ - 1 - 1 - 1 - 1 - 1 - 1 \end{array} \left. \vphantom{\begin{array}{r} 1 - 1 + 1 - 1 + 1 - 1, \&c., \\ 1 + 1 + 1 + 1 + 1 + 1 \\ - 1 - 1 - 1 - 1 - 1 - 1 \end{array}} \right\} = 1$$

$I + I + I + I + I, \text{ \&c,}$
 $I - I$

 $I + I + I + I + I$
 $- I - I - I - I - I$

Here,

Here, if under the first 1 the last -1 be placed, the arrangement will be as above. Hence also it will clearly follow, that the nullities in unity are triple those in $\frac{1}{2}$, quadruple those in $\frac{1}{4}$, &c.; and this will be at once apparent by placing the one under the other thus:

$$\begin{array}{r} 1 - 1 * + 1 - 1 * + 1 - 1 *, \&c., = \frac{1}{2} \\ 1 + 1 + 1 + 1 + 1 + 1 + 1 + 1 + 1 + 1 \\ - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 \end{array} \Bigg\} = 1$$

For, in the upper series there are three nullities, and in the lower nine; and, in like manner, it will be manifest that the nullities in unity are quadruple those in $\frac{1}{4}$.

8. If the nullity $1 - 1$ be continually involved into itself, the following nullities will be produced, viz. $1 - 2 + 1$, $1 - 3 + 3 - 1$, $1 - 4 + 6 - 4 + 1$, $1 - 5 + 10 - 10 + 5 - 1$, $1 - 6 + 15 - 20 + 15 - 6 + 1$, $1 - 7 + 21 - 35 + 35 - 21 + 7 - 1$, &c, each of which will be found to possess a different power from the rest, and will consequently be a nullity of a different order.

The first remarkable property of these nullities is this, that each when it divides unity produces the terms of the rest in a consequent order. Thus, $1 - 1$ when it divides 1 produces $1 + 1 + 1$, &c., the first terms of the several series; $1 - 2 + 1$ when it divides 1 produces $1 + 2 + 3 + 4$, &c., the second terms; $1 - 3 + 3 - 1$ produces $1 + 3 + 6 + 10$, &c., the third terms, and so of the rest.

9. In the next place, it is remarkable that when any preceding is divided by any immediately following nullity, the quotient is always $1 + 1 + 1$, &c, ad infinitum, $= \frac{1}{1-1}$. Thus, $\frac{1-1}{1-2+1} = 1 + 1 + 1$, &c, $\frac{1-2+1}{1-3+3-1} = 1 + 1 + 1$, &c; and so of the rest.

10. In the third place it follows, since $1 - 2 + 1$ is the square, and $1 - 3 + 3 - 1$ the cube of $1 - 1$, that $\frac{1}{1-2+1}$ is the square, and $\frac{1}{1-3+3-1}$ the cube of $\frac{1}{1-1}$. Hence, the sum of the series of numbers in a natural order, viz. 1. 2. 3. 4, &c, when infinitely continued is equal to the square of the sum of the series $1 + 1 + 1$, &c, infinitely continued; and $1 + 3 + 6 + 10$, &c, ad infinitum, is the cube of the said

said series. In like manner, the series arising from the expansion of $\frac{1}{1-4+6-4+1}$ will be the fourth power of $1 + 1 + 1$, ad infin.; and so of the rest.

It may here be necessary to observe that it is not possible to conceive more than three kinds of the actual infinite; viz. the infinite in power, in magnitude, and in number. The infinite in power is that which subsists in divinity; in magnitude the actual infinite has no subsistence whatever; and in number it has partly a subsistence, and partly not: for it does not subsist collectively, or at once, but according to a part, or, in other words, according to the power of receiving an additional number beyond any assignable number. Hence one infinite series may be greater than another, because the terms in the one are continually greater than the terms in the other. That is to say, the one has the power of continually supplying greater terms than the other: not that the aggregate of one infinite series is greater than that of another when the terms are actually infinite; for this is impossible, because there can be no numerical infinite with an aggregate subsistence; but when one series continued to infinity is greater than another, the terms in it are infinite only in capacity. Modern mathematicians, not attending to this distinction, have had no clear conception of the nature of the mathematical infinite, considered as having an actual subsistence.

11. These nullities including $1 - 1$, I call circular nullities of the first order; those produced from the involution of $2 - 2$, including $2 - 2$, circular nullities of the second order; from $3 - 3$, of the third order, and so on: each of which orders possesses different powers, as will be obvious to those who think fit to make the trial.

12. From hence it will appear how much Emerson was mistaken in the following corollaries respecting Nullities, in his 'Treatise on Algebra, p. 209. "If 0 (says he) multiply an infinite quantity, the product is a finite quantity. Or a finite quantity is a mean proportional between nothing and infinity." For this is only true of nullities when they multiply infinite quantities formed from fractions whose denominators are such nullities as the multiplying nullity. Thus, $1 - 1 \times \frac{1}{1-1} = 1$, or $2 - 2 \times \frac{1}{2-2} = 1$, or $1 - 1 \times \frac{4}{1-1} = 4$, &c. But this is not the case when the denominator of the fraction by which the infinite quantity is produced is any power of $1 - 1$,

1 — 1, or 2 — 2, &c. Thus, for instance, $1 - 1, \times \frac{1}{1 - 2 + 1} = 1 + 1 + 1, \&c$ ad infinitum, viz. the product of an infinite quantity multiplied by a nullity, may be an infinite quantity.

13. In the next place he observes, "that if 0 be divided by 0, the quotient is a finite quantity of some sort. But this is true only of nullities of the same form, such as $1 - 1, 2 - 2, \&c$: for, if $1 - 1$ be divided by $1 - 2 + 1$, or $1 - 2 + 1$ by $1 - 3 + 3 - 1$, the quotient is an infinite quantity.

14. In the third place, he says "that adding or subtracting any finite quantity from an infinite quantity makes no alteration." This, however, is likewise false: for, let 1 be added to $\frac{1}{1 - 1}$ and we shall have $\frac{1 + 1 - 1}{1 - 1}$, which is equal to $1 + 2 + 1 + 1 + 1, \&c$ ad infinitum; and is precisely more by the addition of unity than $\frac{1}{1 - 1}$, or $1 + 1 + 1 + 1, \&c$ ad infin. Thus, too, $\frac{1}{1 - 1}$ less by unity is equal to $\frac{1 - 1 + 1}{1 - 1} = 1 * + 1 + 1, \&c$ ad infin., which is less than the series $1 + 1 + 1, \&c$ by unity, as the star indicates.

15. Nullities are infinitely small quantities: for let a represent any finite quantity; then, if a be divided by the infinite quantity $\frac{a}{1 - 1}$, the quotient will be $\frac{a - a}{a} = 1 - 1$. Hence an infinitely small part of 2 is $2 - 2$, of 3, $3 - 3$, &c.: and hence, that which has been hitherto called a neutral, is in reality a converging series.

16. Nullities, when multiplied by nullities, are diminished, which is a property directly contrary to the nature of numbers, and evinces that they are essentially different from quantities. Thus, $a - a \times a - a = a - 2a + a$, which is an infinitely small part of $a - a$: for $a - 2a + a = a - a$ divided by $\frac{1}{a - a}$.

17. Hence nullities are something belonging to, without being, quantity: for, that they are not quantities is evident from the above mentioned property, and also from this, that when they divide finite quantities, the quotient of each is an infinite quantity,

quantity, which is also a property contrary to that of quantity : and, that they are not merely nothings is evinced by this, that they are equal to finite quantities, when multiplied by infinite quantities, or when infinitely added to themselves. Hence, they may be considered as subsisting between nothing and quantity.

18. When a circular nullity of the first order is subtracted from the nullity immediately above it, the remainder will be the nullity which immediately precedes it. Thus, if $1 - 2 + 1 = 1 - 1 \times 1 - 1$ be subtracted from $1 - 1$, the quotient is $1 - 1$. Thus, also, $1 - 3 + 3 - 1$ subtracted from $1 - 2 + 1$ leaves $1 - 2 + 1$, and so of the rest. But a nullity subtracted from itself in the following manner, is the same as that nullity multiplied by $1 - 1$. Thus,

$$\begin{array}{r} 1 - 1 \\ 1 - 1 \\ \hline 1 - 2 + 1, \text{ and} \end{array} \quad \begin{array}{r} 1 - 2 + 1 \\ 1 - 2 + 1 \\ \hline 1 - 3 + 3 - 1; \text{ and so of the rest.} \end{array}$$

19. To divide a nullity by an infinite quantity, is the same thing as to multiply a nullity by a nullity. Thus, $1 - 1$ divided by $\frac{1}{1-1} = 1 - 2 + 1 = 1 - 1 \times 1 - 1$.

20. An infinite quantity divided by a nullity becomes infinitely increased. Thus $\frac{1}{1-1}$ divided by $1 - 1$ gives $\frac{1}{1-2+1}$.

21. The quotient of any number divided by a nullity is different from the quotient of the same number when distributed into unities, or numbers equal to the whole, and divided by the same nullity. Thus, 2 divided by $1 - 2 + 1 = 2 + 4 + 6 + 8$, &c ad infin.; but $2 + 1$ divided by $1 - 2 + 1 = 1 + 3 + 5 + 7$, &c, and the latter series is less than the former by $1 + 1 + 1$, &c ad infin. $= \frac{1}{1-1}$. Or, supposing m to represent any number whatever, $\frac{m}{1-2+1} = m + 2m + 3m + 4m$, &c ad infin. but $\frac{\frac{1}{2}m + \frac{1}{2}m}{1-2+1} = \frac{1m}{2} + \frac{3m}{2} + \frac{5m}{2} + \frac{7m}{2}$, &c.

22. An

22. An infinite quantity, whose denominator is $1 - 1$, when subtracted from itself is equal to a finite quantity; but an infinite quantity, whose denominator is $1 - 2 + 1$, or any other circular nullity of the first order, when subtracted from itself is equal to an infinite quantity. Thus, $\frac{a}{1-1} - \frac{a}{1-1} = a$; but $\frac{a}{1-2+1} - \frac{a}{1-2+1} = \frac{a-a}{1-2+1} = a + a + a$, &c. ad infin. Hence, an infinite quantity, subtracted from itself, is the same thing as a nullity divided by a nullity. Hence, too, every finite quantity may be considered as an infinite nullity, viz. as a nullity whose terms are infinite.

23. If a nullity consisting of two terms, with a finite number of intervals, be divided by $1 - 1$, the quotient will always be a finite number exceeding by unity the number of the intervals in the given nullity. Thus, if $a \dots - a$ be divided by $1 - 1$, the operation will be as follows,

$$\begin{array}{r}
 1-1) a \dots - a (a + a + a \\
 \underline{a - a} \\
 + a \dots \\
 \underline{a - a} \\
 + a - a \\
 \underline{a - a} \\
 \dots
 \end{array}$$

and the quotient will be $3a$, which is one more in number than the number of the intervals.

24. Hence, if the intervals are infinite in number, the quotient will be an infinite series: so that $\frac{a \infty - a}{1-1} = a + a + a$, &c. ad infin.

25. Hence, too, a nullity with infinite intervals is equal to a finite quantity; for $\frac{a}{1-1} = a + a + a$, &c.

26. And

26. And, consequently, nullities with intervals are to each other as the numbers arising from their division by $1-1$. Thus, $a \dots -a$ is to $a \dots -a$, as 3 to 4, and so of others.

27. It will likewise be found that, $\frac{1 \dots -1}{4-4} = \frac{1}{2}$, $\frac{1 \dots -1}{9-9} = \frac{1}{3}$, $\frac{1 \dots -1}{2-2} = \frac{1}{4}$, and $\frac{1 \dots -1}{3-3} = \frac{2}{3}$; and that $\frac{1}{1 \dots -1} =$ an infinite series of $\frac{1}{4}$.

28. The infinite quantity $\frac{a}{1-1}$ divided by $\frac{a}{1-1}$ is equal to a ; but the infinite quantity $\frac{a}{1-2+1}$ divided by $\frac{a}{1-1} = a + a \times a$, &c. ad infin. viz. the quotient of a greater infinite quantity divided by a lesser, is also an infinite quantity. On the contrary, the quotient of a lesser infinite quantity divided by a greater is an infinitely small quantity. Thus, $\frac{a}{1-1}$ divided by $\frac{a}{1-2+1} = 1-1 =$ an infinitely small part of 1.

29. The infinite series of negatives $1-2+3-4+5-6$, &c. is produced by the multiplication of $1-1+1-1$ ad infin. into itself, as follows :

$$\begin{array}{r}
 1-1+1-1+1-1 \\
 1-1+1-1+1-1 \\
 \hline
 1-1+1-1+1-1 \\
 -1+1-1+1-1+1-1 + \&c. \\
 +1-1+1-1+1-1 + \&c. \\
 -1+1-1+1-1 + \&c. \\
 +1-1+1-1 + \&c. \\
 -1 + \&c. \\
 \hline
 1-2+3-4+5-6 \quad \&c.
 \end{array}$$

Which instance of itself affords a sufficient proof that $1-1$ taken collectively is not the same as 0.

CHAP. II.

30. If m and a represent any two quantities whatever, of which m is the greater, then the expression $\frac{a}{a+m}$ is said, when expanded, to produce an infinite diverging series; viz. according to modern mathematicians, the series $1 - m + m^2 - m^3 + m^4 - m^5$, &c, infinitely diverges from the truth: that this however is false, when every two terms of the series are taken collectively, and is only true when they are actually separated from each other by subtraction, we now propose to evince.

31. "If the terms in the quotient (says Wolfius in his Algebra, p. 83, speaking of diverging series) continually increase, the series, the longer it be continued, goes the further from the true quotient; nor can it be made equal to it, except when the series ends you add the remainder with its sign. Ex. Let $\frac{1}{3} = \frac{1}{1+2}$, the quotient will be found $1 - 2 + 4 - 8 + 16 - 64 + 128$, &c. The term 1 exceeds $\frac{1}{3}$ by $\frac{2}{3}$; two terms want $\frac{4}{3}$; three terms exceed by $\frac{8}{3}$, and four want $\frac{16}{3}$, and so on. Let us suppose the series to end in -8 , then $\frac{1}{1+2} = 1 - 2 + 4 - 8 + \frac{16}{3}$; but $1 - 2 + 4 - 8 = -5 = -\frac{15}{3}$, therefore $\frac{1}{1+2} = \frac{16}{3} - \frac{15}{3} = \frac{1}{3}$."

Here again, it is singular in the extreme, that neither Wolfius, though so great a mathematician, nor any other mathematician prior or posterior to him, Newton himself not excepted, should have tried the result of multiplying such series collectively by the denominators of their producing fractions; for, as, in this case, the product would have been found to be equal to the numerators of such fractions, it must necessarily follow that the aggregates of these series are precisely equal to the fractions by which they are produced.

Thus, in the instance adduced by Wolfius, if $1 - 2 + 4 - 8 + 16 - 64$, &c, be multiplied by $1 + 2$ as below, the product will be unity.

$$\begin{array}{r}
 1 - 2 + 4 - 8 + 16 - 64 \\
 1 + 2 \\
 \hline
 1 - 2 + 4 - 8 + 16 - 64 \text{ \&c} \\
 + 2 - 4 + 8 - 16 + 64 \text{ \&c} \\
 \hline
 1 \quad . \quad . \quad . \quad . \quad .
 \end{array}$$

For

For the product can only be considered as accurate to as many terms as there are in the multiplicand.

32. Hence, $1 - 2, 4 - 8, 16 - 64, \&c.$, taken collectively, are not the same as $-1, -4, -48, \&c.$ And hence, the series which have been hitherto called diverging, are in reality converging series, as well as those which have been erroneously denominated neutral.

33. But, that the reader may be fully convinced that a negative quantity, when considered in connexion with the terms by which it is produced, is not the same as when considered separate from those terms, let him attend to the following instance: If $1 - 5$, in whatever way it may be considered, was always the same as -4 , and $1 - 2$ the same as -1 , then, since -1 divided by -4 is equal to $\frac{1}{4}$, $1 - 2$ divided by $1 - 5$ would also be equal to $\frac{1}{4}$, but, on the contrary, it is equal to the infinite series $1 + 3 + 15 + 75, \&c.$ And this may be further proved by an infinity of similar instances, as the mathematical reader will easily perceive.

34. When m is considered as representing any quantity whatever greater than a , as we have already observed, it is evident that $a - ma$ will represent any negative quantity whatever in connexion with the terms by which it is produced; and, consequently, since $\frac{a}{a - ma}$ is equal to an infinite quantity $= 1 + m + m^2 + m^3 + m^4, \&c.$, ad infin. $a - ma$ will be an infinitely small part of a ; for a divided by $\frac{a}{a - ma} = \frac{a^2 - ma^2}{a} = a - ma$.

35. Hence $1 - 2, 1 - 3, 1 - 4, \&c.$, will be infinitely small parts of 1 . It must however be carefully remembered that such like expressions, which I call infinitely small quantities of the third order, are only infinitely small quantities when considered collectively; for, taken separately, they are less than nothing.

36. There is a remarkable difference between $1 + 1 - 2$ and $2 - 2$; for $\frac{1}{1 + 1 - 2} = 1 - 1 + 3 - 5 + 11 - 21, \&c.$ ad infin., but $\frac{1}{2 - 2} = \frac{1}{2} + \frac{1}{2} + \frac{1}{2}, \&c.$ ad infin. and universally $\frac{a}{a + a - ma}$ is very different from $\frac{a}{2a - ma}$.

3 M 2

37. Thus

37. Thus, too, since $\frac{1}{1-2} = 1 + 2 + 4 + 8, \&c \text{ ad infin.}$, and $\frac{1}{1-1-1} = 1 + 1 + 2 + 3, \&c \text{ ad infin.}$, it is evident that $1-2$ is not the same as $1-1-1$: or, in other words, $1-2$ taken collectively as a whole, is very different from $1-1-1$ taken collectively; and so of all other similar expressions.

38. When the middle terms of a circular nullity of the first order are multiplied by any number, the nullity is by such multiplication infinitely diminished. Thus, if the middle terms of the nullity $1-3+3-1$ be multiplied by 2, the nullity produced $1-6+6-1$ will be infinitely less than $1-3+3-1$: and universally $1-3m+3m-1$ will be infinitely less than $1-3+3-1$, because $\frac{1}{1-3m+3m-1}$ is infinitely greater than $\frac{1}{1-3+3-1}$.

39. Of some infinitely small quantities, the terms taken separately produce finite quantities. Thus $1-4+4$ is an infinitely small part of $1-2$, for it is equal to $1-2$ divided by $\frac{1}{1-2}$; but when its value is considered by separating its terms, viz. when it is considered as $-3+4$, 4 being added to -3 the result will be unity. Thus too, $1-5+6$ is a still infinitely smaller part of $1-2$ than $1-4+4$; for it is equal to $1-2$ divided by $\frac{1}{1-3}$; but, when taken separately, it is equal to 2. And this appears to me to be an admirable property of infinitely small quantities of this kind.

40. Hence, it appears that some infinitely small quantities when taken separately are actually nothing, but, when taken collectively as a whole, are nullities, or something belonging to quantity without being quantity; and, that others again, when taken separately, are quantities, but are not so when taken collectively. The first of these are such nullities as $1-1$, $2-2$, &c; and the second are such expressions as $1-4+4$, &c, or infinitely small quantities of the third order.

41. Since $\frac{1}{1-2}$ is an infinitely greater infinite quantity than $\frac{1}{1-1}$, it follows that $1-2$ is an infinitely smaller infinitely small quantity than $1-1$; but $1-1$ is not

not quantity, and consequently $1 - 2$ is not quantity; and so of all other similar expressions.

42. It will be found that the nullity $1 - 2 + 1$ added to itself, either finitely or infinitely, in a separate manner, is not the same as the series $1 - 2 + 1 + 1 - 2 + 1$, &c. Or, in other words, the aggregate of $1 - 2 + 1$ added to itself is an infinitely small quantity of a different order from $1 - 2 + 1$ connected with itself so as to form one whole without any separation. Thus

$$1 - 4 + 2 = + \left. \begin{array}{l} 1 - 2 + 1 \\ 1 - 2 + 1 \end{array} \right\} \text{ is very different from } 1 - 2 + 1 + 1 - 2 + 1.$$

For, $\frac{1}{2 - 4 + 2} = \frac{1}{2} + 1 + \frac{3}{2} + 2 + \frac{5}{2}$, &c, but $\frac{1}{1 - 2 + 1 + 1 - 2 + 1} = 1 + 2 + 3 + 3 + 3 + 3 + 4 + 5 + 6 + 6$, &c.

This also appears to be the case with every series of infinitely small quantities, except those of the forms $1 - 1$, $2 - 2$, $3 - 3$, &c.

43. The fraction $\frac{1}{1 + 1}$ subtracted from itself collectively leaves an infinite series, which yet is but an infinitely small quantity: for $\frac{1}{1 + 1} - \frac{1}{1 + 1} = \frac{1 - 1}{1 + 1} = 1 - 2 + 2 - 2 + 2 - 2$, &c ad infin.

44. Since an infinite quantity is produced by dividing unity by an infinitely small quantity, it follows that, on the contrary, an infinitely small quantity is produced by dividing unity by an infinite quantity. Thus, since $\frac{1}{1 - 1} = 1 + 1 + 1$, &c,

$\frac{1}{1 - 2 + 1} = 1 + 2 + 3 + 4$, &c, and $\frac{1}{1 - 2} = 1 + 2 + 4 + 8$, &c; on the

contrary, $\frac{1}{1 + 1 + 1 + 1 \text{ \&c}} = 1 - 1$, $\frac{1}{1 + 2 + 3 + 4 \text{ \&c}} = 1 - 2 + 1$, and

$$\frac{1}{1 + 2 + 4 + 8 \text{ \&c}} = 1 - 2.$$

This being the case, since also an infinitely small quantity is in reality void of quantity, or, in other words, has a non-quantitative subsistence, it follows that infinite orders of infinite series may be conceived to have a non-quantitative subsistence in unity. Thus the series $1 + 2 + 3 + 4$, &c, subsists in unity according to $1 - 2 + 1$; the series $1 + 2 + 4 + 8$, &c, according to $1 - 2$; and so of the rest. Hence we shall be able to discover the true nature of infinitely small quantities: for it may be demonstrated

monstrated as follows, that they are negations of infinite multitude. In the infinitely small quantity, for example, $1 - 2$, it is evident that 2 does not subsist according to quantity, since in this case $1 - 2$ would be the same as -1 , which we have clearly shown it is not; 2 , therefore, must be non-quantitative. This being the case, it follows that when this 2 is taken from unity, an infinite series of non-quantitative numbers is at the same time taken from unity. For since unity, as we have shown above, contains infinite series of numbers with a non-quantitative subsistence, if a non-quantitative 2 were alone taken from unity, an infinitely small part only of unity would be taken away, and consequently the remainder would not be an infinitely small quantity. In like manner the expressions $1 - 1$, $1 - 3$, $1 - 4$, &c, signify that infinite non-quantitative series are subtracted from unity.

45. Hence, since $1 - 1$, $1 - 2$, $1 - 3$, &c, are infinite negations of non-quantitative multitude, they are by a much stronger reason infinite negations of actual quantity.

46. Hence, too, the powers of the infinitely small quantities $1 - 1$, $1 - 2$, &c, viz. $1 - 2 + 1$, $1 - 4 + 4$, &c, will by a much stronger reason be infinite negations of multitude: for they are infinitely small parts of the infinitely small quantities of which they are the powers, as we have before shown.

C H A P. III.

HAVING thus ascertained the nature of infinitely small quantities, I now propose to show that in continued quantity they are points; that, in consequence of this, linear points, or the points properly belonging to a line, are very different from those which properly belong to a superficies; and the points in a superficies from those which properly belong to a solid: and, in the third place, that points have the same relation to each other as the lines, superficies, and solids to which they belong,

47. Let a then represent any line, and an infinitely small part of this will be $a - a$: for a divided by $\frac{1}{1-1} = a - a$. But $a - a$ is not quantity: it is, however,

ever, something belonging to the line, though it is no quantitative part of the line. But there is nothing belonging to a line, and which is not quantity, except a point: $a - a$, therefore, is a point. In like manner let $a b$ represent any superficies, and $ab - ab$ will be an infinitely small superficies; i. e. a point of a very different order from $a - a$. And if $a b c$ be any solid, $abc - abc$ will be an infinitely small solid, or point of a very different order from either $ab - ab$, or $a - a$.

48. Hence it follows, that mathematicians have been greatly mistaken in supposing that infinitely small superficies may be considered as lines; since it now evidently appears that they are points.

49. In the third place, since $a - a$ is to $b - b$ as a to b , and $ab - ab$ to $cd - cd$, as ab to cd , and $abc - abc$ to $def - def$ as abc to def , it follows that points have the same relation to each other as the lines, superficies, and solids to which they belong.

Hence, since $\frac{ab - ab}{b - b} = a$, and also $\frac{abc - abc}{bc - bc} = a$, and $\frac{abc - abc}{c - c} = ab$, it follows that the points which compose a superficies and solid may also compose a line, and that those which compose a solid may compose a superficies; but in this case, the points belonging to a superficies when they compose a line approximate nearer to quantity than linear points, or points properly belonging to a line; and those belonging to a solid approximate still nearer to quantity. For, as we have shown that a finite quantity is produced by the subtraction of an infinite quantity from itself, it is evident that ab approaches nearer, and abc still nearer to an infinite quantity than a ; and consequently $ab - ab$ and $abc - abc$ are greater points than $a - a$. Hence, too, we see, in consequence of these being greater points, that there is a less infinity of them in a than of $a - a$.

There is, therefore, a threefold order of points, viz. linear, superficial, and solid, each of which is entirely impartible.

50. It must here, however, be observed, that when a line is considered as consisting of points which properly belong to a superficies or solid, such line must also be considered as belonging to superficies or solid, and not as line subsisting by itself; and
the

the like must be understood of superficies, when considered as consisting from points, which belong to a solid.

51. Should it seem strange to admit that superficies and solids consist from an infinity of points, it will no longer appear so when it is considered that mathematicians universally acknowledge that a line consists of an infinity of points, a superficies of an infinity of lines, and a solid of an infinity of superficies: for, this being granted, a superficies and solid will also consist of points, though in an infinitely greater infinite number when considered as linear points than those which compose a line. It must likewise be carefully observed that, as a multitude of monads or unities in number corresponds to matter; (for by the accession of a certain numerical form these monads become a certain definite number,) so infinite points become the matter or recipient of continued quantity; or, in other words, infinite points are continued quantity, *εν δυναμει*, in capacity.

52. Since, as we have before observed, points have the same relation to each other as the lines, superficies, and solids to which they belong, hence the points in a right line may be considered as rectilinear, and those in a circle as circular points. If, therefore, p represent the periphery of a circle, and d the diameter, $\frac{p-p}{1-1} = p$, or the periphery is equal to an infinite number of circular points; $p-p$ representing a point of this kind. Again: $\frac{p-p}{1-1} \times \frac{d}{4} = \frac{pd-pd}{4-4} = \frac{pd}{4} =$ the area of the circle $= \frac{p}{1-1} \times \frac{d-d}{4}$. In which case $p \times d-d$ will represent a point affected with superficies, or which, in other words, is something belonging to a cylindric superficies; a particular infinity of which superficial points, i. e. $\frac{1}{4-4}$, is equal to the area of the circle.

53. Should it seem strange that the infinity of points in the area of a circle is but $\frac{1}{4}$ the infinity of those in the periphery; for $\frac{1}{1-1} \times p-p = p$, and $\frac{1}{4-4} \times pd-pd = \frac{1}{4}p$, it must be remembered that $p-p$ is a linear, and $pd-pd$ a superficial point,

point, and consequently that every point in the periphery is to every point in the area of a circle as the periphery of the base of a cylinder to its superficies, when the diameter of such periphery is equal to the altitude of the cylinder.

54. Also, since $\frac{1-1}{1-1} = 1$, $\frac{2-2}{1-1} = 2$, $\frac{3-3}{1-1} = 3$, &c; and since 1 — 1 is to 2 — 2 as 1 to 2, and 2 — 2 is to 3 — 3 as 2 to 3, and so on; and consequently, if 1, 2, 3, &c, represent lines, every point in 2 is to every point in 1, as 2 to 1, and so of the rest; hence points approximate to quantity in proportion to the increase of the lines with which they are connected.

55. Again: since $\frac{1-1}{1-1} = 1$, $\frac{1-2+1}{1-2+1} = 1$, and $\frac{1-3+3-1}{1-3+3-1} = 1$, and so on ad infinitum, when the infinitely small quantities which form the numerators of these fractions are considered as representing points, and the fractions themselves as representing lines, it follows that every line may be considered as consisting either of an infinite series of points of the order $\frac{1}{1-1}$, or of an infinite series of the order $\frac{1}{1-2+1}$ which is the square of the former, and an infinitely small part of it, and after this manner we may proceed ad infinitum, not only in lines, but also in superficies and solids.

56. I shall conclude this chapter with observing that the *perfect* summation of every kind of infinite series can perhaps only be obtained by means of these infinitely small quantities. General rules may be given for the summation of any infinite series of whole numbers, as I may perhaps show at some future period, when I propose to enter more largely into the investigation of this abstruse subject. At present let the following instances of the summation of infinite series suffice.

$\frac{1-1}{1+2+1} = 1 - 3 + 5 - 7 + 9 - 11$, &c, which series is the reciprocal of the series $\frac{1}{1} - \frac{1}{3} + \frac{1}{5} - \frac{1}{7} + \frac{1}{9} - \frac{1}{11}$, &c, which is equal to $\frac{1}{4}$ of the circumference of a circle, when the diameter is 1. $\frac{1+1}{1-3+3-1} = 1 + 4 + 9 + 16 + 25$, &c,

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the reciprocal of the series $1 + \frac{1}{4} + \frac{1}{9} + \frac{1}{16}$, &c, and which is equal to $\frac{1}{4}$ of the square of the circumference when the diameter is 1.

57. Again: according to Dr. Wallis, in his Algebra, p. 296, as the product of the squares of the odd numbers, 3, 5, 7, 9, &c ad infin. is to the product of the same squares diminished by unity, so is the square of the diameter to the area of the circle; viz. as $9 \times 25 \times 49 \times 81 \times 121$, &c ad infin. to $8 \times 24 \times 48 \times 80$, &c ad infin. Now, though I have not discovered two fractions, which when expanded will give the products of these two series; yet the following fractions will give their sum: for, $\frac{9-2+1}{1-3+3-1} = 9 + 25 + 49$, &c, and $\frac{8}{1-3+3-1} = 8 + 24 + 48 + 80$, &c, ad infin.; in which last fraction it is remarkable that the numerator 8 is equal to the numerator of the other fraction when its terms are taken separately.

58. We have already shown that $\frac{1+1}{1-3+3-1} = 1 + 4 + 9 + 16$, &c, the terms of which are the squares of the terms of the series $1 + 2 + 3 + 4$, &c, = $\frac{1}{1-2+1}$: this being the case, it will be found that $\frac{1+4+1}{1-4+6-4+1} = 1 + 8 + 27 + 64$, &c, the terms of which are the cubes of the series $1 + 2 + 3 + 4$, &c; that $\frac{1+11+11+1}{1-5+10-10+5-1} = 1 + 16 + 81 + 256$, the terms of which are the fourth powers of the same series, and that $\frac{1+26+66+26+1}{1-6+15-20+15-6+1} = 1 + 32 + 243 + 1024$, &c, the terms of which are the fifth powers of that series; and so on.

59. In these fractions it is in the first place remarkable, that the denominators $1-2+1$, $1-3+3-1$, $1-4+6-4+1$, &c, are the square, cube, &c of the nullity $1-1$; and, in the next place, that the numerator of the first fraction $\frac{1}{1-2+1}$ multiplied by 2, is equal to the sum of the terms of the numerator of the second fraction; that the numerator of the second fraction multiplied by 3 is equal to the sum of the terms of the numerator of the third; that of the third multiplied by 4 = the sum of the fourth, and so on. Thus $1 \times 2 = 1 + 1$ the numerator of the

the second fraction; $1 + 1 \times 3 = 6 = 1 + 4 + 1$ the numerator of the third;
 $1 + 4 + 1 \times 4 = 24 = 1 + 11 + 11 + 1$ the numerator of the fourth; and
 so on.

C H A P. IV.

60. HAVING thus unfolded the nature of infinitely small quantities, I shall in the next place proceed to show that they are admirable images of the *το ἐν*, or THE ONE, of the Pythagoreans and Plato, concerning which, as we have seen, so much has been said by Aristotle in the thirteenth and fourteenth of the preceding books; and that they beautifully illustrate some of the most profound dogmas of ancient theology.

61. First then, we have demonstrated that infinitely small quantities are negations of infinite multitude; and a negation of all multitude is that which characterises *the one*, as is evident from the first hypothesis of the Parmenides of Plato. As all finite quantities likewise may be considered as consisting of infinite series of infinitely small quantities, it follows that infinite negations of multitude may be said to constitute all finite quantity. Admirable, therefore, is the nature of negation, as is beautifully shown by Proclus in the following extract from the fifth book of his most excellent MS. Commentary on the Parmenides; for the length of which the intelligent reader will, I am persuaded, require no apology.

“ Let us now consider what negations are, and whether they are better or worse than affirmations: for affirmation appears to all men to be more venerable than negation; negation, say they, being a privation, but affirmation the presence and a certain habit of form. To forms, indeed, and to things invested with form, affirmation is better than negation; for it is necessary that their own habit should be present with forms, and that privation should be absent; and, in short, to be is more accommodated to beings than not to be, and affirmation than negation: for being is the paradigm of affirmation, but non-being of negation. But it is not immanifest how Plato, in the Sophista, says that non-being, by which he means difference, is related to being, and that it is not less than being. But, since non-being

is multifarious, one kind subsisting as more excellent than, another as coordinated with, and a third as the privation of, being, it is evident that we may also speculate three species of negations; one above affirmation, another inferior to affirmation, and a third in a certain respect equal to it. Affirmation, therefore, is not always uniformly more excellent than negation, since, when negation speaks of that non-being which is above being, affirmation is allotted the second order. But, since this non-being is also two-fold, one kind * being participated by being, and the other † not con-numerated with any being, it is evident that to this latter affirmation is not by any means adapted, and that to the former negation more properly belongs than affirmation; though in a certain respect affirmation is adapted to this, so far as it communicates with being. However, though nothing can be truly said of that non-being which is uncoordinated with being, yet negation may be more properly asserted of it than affirmation: for, as affirmations belong to beings, so negations to non-being. In short, affirmation wishes to be conversant with a certain form; and when the soul says that one thing is present to another, and makes an affirmation, it adduces some of the kindred-natures which it contains. But the first cause of all is above form, and it is not proper to introduce to it any thing belonging to secondary natures, nor transfer to it things adapted to us: for we shall thus deceive ourselves, and not assert what the first is. We cannot, therefore, in a becoming manner employ affirmations in speaking of this cause, but rather negations of secondary natures; for affirmations hasten to know something of one thing as present with another. But that which is first is unknown by the knowledge which is connate with beings, and nothing can be admitted as belonging to or present with it, but rather as not present: for he is exempt from all composition and participation. To which we may add, that affirmations manifest something definite; for non-man is more infinite than man. The incomprehensible and uncircumscribed nature of *the one* is therefore more adapted to be manifested through negations: for affirmations may be said to vanquish beings, but negations possess a power of expanding from things circumscribed to the uncircumscribed, and from things distributed in proper boundaries to the indefinite. Can it, therefore, be said that negations are not more adapted to the contemplation of *the one*? For its ineffable, incomprehensible,

* Viz. The divine unities. See the Additional Notes.

† That is, the ineffable principle of things.

and

and unknown nature can alone through these be declared, if it be lawful so to speak, to partial intellectual conceptions such as ours. Negations therefore are better than affirmations, and are adapted to such as are ascending from the partial to the total, from the coordinated to the uncoordinated, and from the circumscribed and vanquished form of knowledge, to the uncircumscribed, single, and simple form of energy.

“ In the next place, let us consider how, and after what manner, negations are adapted to the first cause. They must not then be adapted as in things capable of receiving negation, but yet which do not receive it, as if we should say that Socrates is not white: for, in short, *the one* does not receive any thing, but is exempt from every being, and all participation. Nor, again, must negation be adapted to *the one*, as in that which in no respect receives negation, which possesses a privation of it, and is unmingled with form; as if any one should say that a line is not white, because it is without any participation of whiteness. For that which is first is not simply divulged from its negations; nor are these entirely void of communion with *the one*, but they are thence produced: nor can it be said that, as whiteness neither generates a line, nor is generated by it, so things posterior to *the one*, neither generate *the one*, nor are generated by it; for they thence derive their subsistence. Nor yet must negation be applied according to that middle mode, in which we say that things do not receive, indeed, but are the causes to others in which they are inherent, of receiving affirmation; as, for instance, motion is not moved, but that which is in motion. Negation, therefore, is predicated of it, viz. the not being moved, though other things are moved through it. And, in short, every passion is itself impassive; since, being simple, it either is or is not. But that which suffers, or the passive subject, is through passion a composite. Negations, therefore, are not after this manner denied of *the one*: for neither is *the one* ingenerated in any thing, but is the cause of all the affirmations, the negations of which we introduce to it; but it is by no means ingenerated in those things of which it is the cause. But, if I may be allowed concisely to relate what appears to me, as *the one* is the cause of wholes, so negations are the causes of affirmations; whence such things as the second hypothesis in the Parmenides of Plato affirms, the first denies. For all those affirmations proceed from these negations; and *the one* is the cause of all things, as being prior to all things: for as soul, being incorporeal, produces body, and as intellect, by not being soul, gives subsistence to soul, so *the one*, being void of multitude,

gives.

gives subsistence to all multitude, and, being without number and figure, produces number and figure; and in a similar manner with respect to other things: for it is no one of the natures which it produces; since neither is any other cause the same with its progeny. But if it is no one of the natures to which it gives subsistence, and at the same time gives subsistence to all things, it is no one of all things. If, therefore, we know all things affirmatively, we manifest *the one* negatively, by denying every thing of it; and so this form of negation is generative of the multitude of affirmations. Thus, the unfigured, when applied to *the one*, is not like that of matter which is beheld according to a privation of figure, but it is that which generates and produces the order which subsists according to figure.

“With respect to matter, therefore, negations are worse than affirmations, because they are privations, but affirmations are participations of which matter is essentially deprived. But, with respect to beings, negations are conjoined with affirmations: and, when applied to *the one*, they signify transcendency of cause, and are better than affirmations. Hence, negations of things subordinate are verified in causes posterior to *the one*. Thus, when we say that the soul neither speaks nor is silent, we do not assert these things respecting it as of stones and pieces of wood, or any other insensible thing, but as of that which is generative in an animal of both voice and silence. And again, we say that nature is neither white nor black, but uncoloured and without interval. But is she without these in the same manner as matter? By no means? for she is better than the things denied. But she is uncoloured and without interval, as generative of all-various colours and intervals. In the same manner therefore, we say that the monad is without number, not as being subordinate to numbers and indefinite, but as generating and bounding numbers. I mean the first monad, and that which we say contains all the forms of numbers. All therefore that is denied of *the one* proceeds from it: for it is necessary that it should be none of all things, that all things may be its offspring. Hence, it appears to me that Plato often denies of *the one* things which are opposite to each other, such as that it is neither *whole* nor *part*, neither *same* nor *different*, neither at *rest* nor in *motion*: for it is expanded above all habitude, and is pure from every duad, being the cause of all the multitude of these, of twofold coordinations, of the first duad, and of all habitude and opposition. For nature is the cause of all corporeal oppositions, the soul of all vital causes, and intellect of the genera pertaining to soul. But
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the one is simply the cause of all divisions : for it cannot be said that it is the cause of some, and not the cause of others ; but the cause of all opposition, is not itself opposed to any thing : for, if it were, it would be requisite that there should be some other cause of this opposition, and *the one* would no longer be the cause of all things. Hence, we say that negations are generative of affirmations ; those which are assumed in the first hypothesis of the Parmenides of those which are investigated in the second : for, whatever the first cause generates in the first hypothesis, is generated and proceeds in its proper order in the second. And thus the order of the gods subsisting from exempt unity is demonstrated."

And shortly after he adds, " But here perhaps some one may ask us whether we use negations through the imbecility of human nature, which is not able firmly to apprehend the simplicity of *the one* through a certain projection (of intellect,) and adhesive vision and knowledge ? Or, whether natures better than our soul know *the one* negatively in an analogous manner ? We reply, therefore, that intellect by its perceptions which are conjoined with forms knows forms, and comprehends intelligibles, and this is a certain affirmative knowledge : for *that which is* approaches to *that which is*, and intellect is that which it understands, through the intellectual perception of itself. But, by an unity above intellect, it is conjoined with *the one*, and through this union knows *the one* by not being that which is being. Hence, it knows *the one* negatively : for it possesses a twofold knowledge, one kind as intellect, the other as not intellect ; one as knowing itself, the other becoming inebriated, as some one says, and agitated with divine fury from nectar ; and one so far as it is, but the other so far as it is not. Much-celebrated intellect itself, therefore, possesses both a negative and affirmative knowledge of *the one*. But if intellect, divine souls also, according to their summits and unities energise enthusiastically about *the one*, and are especially *divine* souls on account of this energy ; but, according to their *intellectual* powers, they are suspended from intellect, round which they harmonically dance. According to their *rational* powers they know themselves, preserve their own essence with purity, and evolve the productive principles which they contain ; but according to those powers which are characterized by opinion, they comprehend and govern in a becoming manner all sensible natures. And all the other kinds of knowledge which they possess are indeed affirmative : for they know beings as they are ; and this is the peculiarity of affirmation. But
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the enthusiastic energy about *the one* is in these a negative knowledge : for they do not know that *the one* is, but that he is NOT, according to that which is better than *the* is. But the intellection of that which is not, is negation. If, therefore, both divine souls and much-celebrated intellect itself know *the one* through negation, what occasion is there to despise the imbecility of our soul, earnestly endeavouring to manifest negatively its uncircumscribed nature? for nothing pertaining to *the first* is such as we are accustomed to know, i. e. a certain quality of a thing, as Plato says in his second Epistle. This however is the cause of every thing beautiful in the soul, viz. to investigate the characteristic of the first, to commit in a becoming manner the knowledge of him to the reasoning power, and to excite *the one* which we contain, that, if it be lawful so to speak, we may know the similar by the similar, so far as it is possible to be known by our order : for, as by opinion we know the objects of opinion, and by the dianoëtic power dianoëtic objects, and as by our intellectual part we know that which is intelligible, so by our *one* we know *the one**."

62. In

* Ἰσως δὲ ἂν τις αὐτοῦ τοῦτο ἡμᾶς ἐπανεροίτο, ποτερον τοῖς ἀποφατικαῖς χρωμεθα διὰ τὴν ἀσθενεῖαν τῆς ἀφρο-
πίνης φύσεως, οὐ δυναμένης τὴν ἀπλοτῆτα τοῦ ἑνὸς παραλαβεῖν δι' ἐπιβολῆς τινος ἐπεριστικῆς, καὶ θεᾶς καὶ
γνώσεως ἐρηρῆσμενης, ἢ καὶ τὰ κρείττονα τῆς ἡμετέρας ψυχῆς κατὰ τὸ ἀναλογικὸν ἀποφατικῶς γιγνώσκει το ἑν.
φαιμεν δὴ οὐκ ὅτι καὶ ὁ νοῦς, ταῖς μὲν συζυγίαις πρὸς τὰ εἰδη νοήσεσιν, αὐτὰ γιγνώσκειν, καὶ περιλαμβάνει τὰ
νοήτα, καὶ ἐστὶν αὐτῇ καταφατικὴ τις ἡ γνώσις. εἰς γὰρ εἰσι πελάζει, καὶ ὁ νοεῖ τοῦτο ἐστὶν, διὰ τῆς ἑαυτοῦ
νοήσεως· τῇ δὲ ὑπὲρ νοῦν ἐπ' αὐτὴν συνηπταί πρὸς τὸ ἑν, καὶ διὰ τῆς εἰσώσεως ταύτης γιγνώσκει το ἑν, τῇ μὴ ὄντι το σν.
ἀποφατικῶς ἀρα γιγνώσκει το ἑν. διττὰς γὰρ ἔχει τὰς γνώσεις, τὴν μὲν ὡς νοῦς, τὴν δὲ ὡς μὴ νοῦς, καὶ τὴν μὲν ὡς ἑαυτὸν
γιγνώσκων, τὴν δὲ μέθων φησι τις καὶ αὐτὸν ἐνθεάζων τῷ νεκτάρει, καὶ τὴν μὲν ὡς ἐστὶ, τὴν δὲ ὡς οὐκ ἐστὶ. τὴν
μὲν ἀρα ἀποφατικὴν ἔχει τῶν γνώσεων, τὴν δὲ καταφατικὴν, καὶ αὐτὸς ὁ πολυμνητὸς νοῦς. ἀλλὰ ρεν εἰ ὁ νοῦς, καὶ
αἱ θεῖαι ψυχαὶ κατὰ μὲν τὰς ἑαυτῶν ἀκροτήτας καὶ τὰς ἐνοτήτας ἐνθουσιαζοῦσι περὶ τὸ ἑν, καὶ εἰσι θεῖαι ψυχαὶ
μαλίστα ταύτης, ἐνεκα τῆς ἐνεργείας, κατὰ δὲ τὰς νοεράς δυνάμεις ἐξηρτῆται τοῦ νοῦ, καὶ περιχορευοῦσιν αὐτὸν
κατὰ δὲ τὰς νοητικὰς, ἑαυτὰς γιγνώσκουσι, καὶ τὴν ἑαυτῶν οὐσίαν ἀχραντῶς σώζουσι, καὶ τοὺς ἑαυτῶν λόγους
ἀνελίττουσι, κατὰ δὲ τὰς δοξαστικὰς τὰ αἰσθητὰ πάντα προεληφασί τε καὶ κατευθυνούσι θεόντως. καὶ πασαι
μεν αἱ αἰσθητικαὶ γνώσεις αὐτῶν εἰσι καταφατικαί, τὰ γὰρ ὄντα ὡς ἐστὶ γιγνώσκουσι, τούτο δὲ ἐστὶ καταφάσεως
ἰδίον· τῇ δὲ ἐνθουσιαστικῇ περὶ τὸ ἑν ἐνεργείᾳ τὸ ἀποφατικὸν ἐστὶ καὶ ἐν ταύταις τῆς γνώσεως οὐ γὰρ ὅτι ἐστὶ τὸ
ἑν γιγνώσκουσιν, ἀλλ' ὅτι οὐκ ἐστὶ, κατὰ τὸ κρείττον τοῦ ἐστὶν. ἢ δὲ τοῦ ὅτι οὐκ ἐστὶ νοήσις ἀπεφασίς ἐστιν. εἰ
τοιοῦν καὶ αἱ θεῖαι ψυχαὶ, καὶ αὐτὸς ὁ πολυμνητὸς νοῦς δι' ἀποφάσεως γιγνώσκει το ἑν, τί χρὴ καταγιγνώσκειν
ἀδυναμῶν τῆς ἡμετέρας ψυχῆς, ἀποφατικῶς αὐτοῦ τὸ ἀπεριληπτόν ἐνδεικνυσθαι σπουδαζούσης; τοῦ γὰρ πρώτου
φησὶν οὐδὲν ἐστὶν τοιοῦτον, οἷον γιγνώσκειν εἰσθαμεν, ποῖον τι μὴν, ὡς αὐτὸς ἐν ἐπιστολαῖς εἰρηκε. ἀλλὰ μὴν
τοῦτο ἐστὶ τὸ πάντων αἰτίον τῇ ψυχῇ καλῶν, τὸ τὴν ιδιότητα τοῦ πρώτου ζητεῖν, καὶ λογισμῶ τὴν ἐκείνου γνῶσιν
ἐπιτρέπειν

62. In the second place, since we have shown that infinite orders of infinite series have a non-quantitative subsistence in unity or the monad, this evinces the truth of what is so often asserted by the Pythagoreans and Platonists, that the monad comprehends in itself all the forms of numbers, and this occultly, and, as it may be said, super-numerically, and not after the manner of quantity. Hence, he who is able to ascend from the mathematical monad to intellect, of which the monad is an imitation, will perspicuously see how all forms or ideas, of which numbers are images, are by a much greater priority comprehended in intellect. He will likewise see how they subsist in occult and indivisible union, and how all are in each, though at the same time each is essentially distinct from the rest. Hence intellect from its all-comprehending nature was called by Parmenides a sphere,

παντοθεν ευκυκλου σφαιρης εναλιγκιον ογκω
μεσον ισοπαλες, και μονη περιγηει χαιρων.

The sense of which is, "Every way similar to a perfect sphere, equal from the middle, and rejoicing in revolving mansion." For all forms are primarily in intellect, but secondarily, and after the manner of images, in the monad and the whole of a sensible nature; physically in the latter, and mathematically in the former. "Hence," says Proclus, "intellect is an intelligible sphere, the monad a dianoëtic, and the world a sensible sphere, containing in itself images of the eternal gods*."

63. Since too, infinitely small quantities,—which, from what has been said, are evidently analogous to the superessential unities, of which we have spoken so largely in note to p. 286, twelfth book, and the additional notes,—since, I say, they subsist infinitely in the monad, and may be considered as constituting the very nature of it,—hence, an infinitely small quantity, or *the one*, is superior to the *monad*; for infinitely small quantities compose, but are not composed from, the monad. And hence we see, that there is an evident distinction between *the one* and the *monad*,

επιτρεπειν δεοντως, και ανεγκειν το εν ημιν εν, ινα τα ομοια το ομοιον ει θεμις ειπειν γινωαι ως κατα την ημετεραν ταξιν δυνατος γινωμεθα. ως γαρ δοξη τα δοξαστα γινωσκομεν, και ως διανοια τα διανοητα, και ως τα ποικηλα τα εν ημιν το νοητον, οντω και το ενι το εν. Procl. in Parmenid. lib. 5.

* Η σφαιρα γαρ νοητη μεν ο νους, διανοητη δε η μοναδα, αισθητη δε ο κοσμος οντος, εικονας φερων εν εαυτη των ειδων θεων. Procl. in Parmenid. lib. 5.

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which, as we have observed in note to p. 353, was one of the dogmas of the Pythagoreans. All number, too, is in like manner full of the nature of *the one*, or the infinitely small; for any number divided by an infinitely small quantity produces an infinite series.

64. Again: when a finite quantity is subtracted from itself, an infinitely small quantity may be considered as the remainder. Thus, a subtracted from a is $a - a$, which conspicuously shows us as in an image, that when all multitude is taken away from beings, *the one* still remains: for numbers are images of beings, and an infinitely small quantity of *the one*.

65. We have also shown that an infinitely small quantity, when considered as connected with magnitude, is a point; and that, thus considered, it is an admirable image of *the one*, which is participated by the highest beings, the following passage from the MS. Commentary of Proclus On the Parmenides beautifully evinces. "An apt resemblance of the progression of the divine unities now presents itself to our view. Because a line is the first continuous and divisible nature amongst magnitudes, hence, it participates of an indivisible, that is, of a point. And this point, though it is allotted a superlinear condition, and is indivisible, yet it subsists in the line, is something belonging to it, and is the summit of the line. To which we may add, that many lines in a circle touch by their several points the centre of the circle. In like manner an intelligible and intellectual essence, because it is the first multiplied nature, on this account partakes of a transcendent unity. And this unity, though it is neither essence nor obnoxious to essential multitude, yet abides in essence, or rather subsists as its vertex, through which every intellectual essence is a god, enjoying divine unity as the very flower of its unity, and as that which conjoins it with *the ineffable one*."

66. Since too, we have shown that infinitely small quantities, or points, in a line have a linear, in a superficies a superficial, and in a solid a solid subsistence, or, in other words, that in a line, superficies and solid, they are respectively affected with the nature of line, superficies and solid, at the same time that they still retain in each their non-quantitative nature,—hence, we may see as in images how incorporeal
natures,

natures, when they become profoundly connected with bodies, are affected indeed with a corporeal nature, but still retain an incorporeal subsistence. And thus much concerning infinitely small quantities so far as they are images of supernal natures.

I shall only observe further at present that the mathematical sciences ought never to be separated from intellectual philosophy. The Pythagoræans and Platonists, from the subsistence of these sciences between sensible and intellectual natures, justly considered them as a bridge, by which we are enabled to pass from the obscurity of the one to the splendor of the other. Hence the Pythagoric ænigma, "a figure and a step, but not a figure and three oboli;" signifying, that we should employ these sciences as a step to higher attainments, and not, by considering them as alone subservient to the necessities of a mortal life, neglect that elevation which rises to an intelligible essence: for the mathematical science, when thus employed as a step, removes, like the Homeric Minerva, the darkness of a sensible nature from the dianoëtic eye, which is better worth saving than ten thousand corporeal eyes, and preserves us by its Hermetic gift from the incantations and delusions of these Circæan realms. "Hence, (says Proclus in Eucl. p. 14,) the business of this science is apparent from its name: for it moves knowledge, excites intelligence, purifies the dianoëtic part, unfolds the forms which we essentially contain, removes the oblivion and ignorance which we possess from generation, and dissolves the bonds with which we are held in captivity by an irrational nature. And all this it effects according to a real similitude of that divinity (Mercury) who leads into light intellectual gifts, fills all things with divine reasons, moves souls to intellect, excites them as from a profound sleep, converts them by inquiry to themselves, perfects them through obstetrication, and through the invention of pure intellect conducts them to a blessed life *."

* Και το εργον αρα της επιστημης ταυτης, οποιον δη τι εστιν εκ του ονοματος δηλουνται, κινητικον της γνωσεως, και ευερτικον της νοησεως, και καθαρτικον της διανοιας, και εκφαντικον των κατ' ουσιαν υμιν (lege ημιν) υπαρχοντων ειδων, ληθης τε και αγνοιας αφαιρετικον, ων απο της γενεσεως εχομεν, και αποδυτικον των εκ της αλογιας δεσμων, κατα τον θεον οντως τον της επιστημης ταυτης εφορον, ος προαγει μεν εις το εμφανες τα νοερα δωρα, πληροι δε παντα των θειων λογων, κινει δε τας ψυχας επι νουν, και ωσπερ εκ καρου βαθους ανεγειρει, δια ζητησεως δε επιστρεφει προς αυτας, και δια μανειας (lege μαιειας) τελειοι, και δια ρευσεως (lege ευρεσεως) τον καθαρον νου περιαγει προς την μακαριαν ζων.

THE END.

ERRATA

P. 145, l. 2, for *which* predication read *this* predication.
P. 152, in the note, for *δεναι* read *δε ναι*.

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